NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

(NASA-CR-144605) RESULTS OF PHASE CHANGE PAINT HEAT TRANSFER TESTS UTILIZING 0.040 SCALE 50% FOREBODY MODELS (NO. 82-0) OF THE ROCKWELL INTERNATIONAL SPACE SHUTTLE ORBITER IN AEDC VKF HYPERSONIC TUNNEL B (TEST OH54A) G3/18

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

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RESULTS OF PHASE CHANGE PAINT HEAT TRANSFER TESTS UTILIZING 0.040 SCALE 50% FOREBODY MODELS (NO. 82-0) OF THE ROCKWELL INTERNATIONAL SPACE SHUTTLE ORBITER IN AEDC VKF HYPERSONIC TUNNEL B (TEST OH54A)

by

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Prepared under NASA Contract Number NAS9-13247

by

Data Management Services
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New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	AEDC V41B-82A
NASA Series Number:	OH54A
Model Number:	82-0
Test Dates:	October 4 through October 9, 1974
Occupancy Hours:	40

FACILITY COORDINATOR:

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Tenn. 37389

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

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ABSTRACT

Results of aerodynamic heating tests on a Rockwell International Space Shuttle orbiter using the phase change paint technique are presented. The test was conducted in the AEDC Tunnel B in October 1974. The model was a 0.040 scale representation of the forward 50 percent of the orbiter. Surface roughness effects on boundary layer transition were investigated. Roughness was simulated by using steel balls varying in diameter from 0 (no balls) to 0.039 inch and with 0.040 inch wide by 0.080 inch deep gaps. A nominal Mach number of 8 was tested with Reynolds number varying from 0.75 through 3.5 million per foot. Angle of attack was varied from 20° to 40°.

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INTRODUCTION

Aerodynamic heating phase change paint hypersonic wind tunnel tests were conducted on 0.040 scale 50% forebody models of the Rockwell International Space Shuttle Orbiter (models 82-0) to determine the effects of various roughness elements on boundary layer transition. The tests were conducted in the Arnold Engineering and Development Center VKF hypersonic wind tunnel B from October 4 through 9, 1974. These tests, OH54A, were the first of three series of entries in the facility to complete OH54.

Three (3) different roughness elements were tested:

1) transverse gaps,

2) transverse plus longitudinal gaps (simulating the landing gear door), and

3) small steel balls (boundary layer tripping device).

A smooth model was also tested.

The tests were conducted at Mach 8 and Reynolds numbers ranging between 0.75×10^6/ft and 3.5×10^6/ft. Model angle of attack was varied from 20° through 40°.

NOMENCLATURE

SYMBOL	COMPUTER SYMBOL	DEFINITION
C_p	C	specific heat of the model material, BTU/lb-°F
g		acceleration due to gravity, 32.17 ft/sec^2
h	H(TO)	heat transfer coefficient based on $T_{AW} = T_o$
	H(.9 TO)	heat transfer coefficient based on $T_{AW} = 0.9\ T_o$
	H(.867 TO)	heat transfer coefficient based on $T_{AW} = 0.867\ T_o$
h_s	HREF	reference heat-transfer coefficient based on Fay-Riddell Theory, BTU/ft^2-sec.-°R
M_∞	MACH NO.	free stream Mach no.
N_r	R	reference nose radius (0.040 ft model scale, 1 ft full scale)
P_∞	P-INF	free stream static pressure, psia
P_r		Prandtl number
P_o	PO	tunnel stilling chamber pressure, psia
P_1, P_2		defined in context
q_o	Q-INF	free stream dynamic pressure, psia
R		universal gas constant, ft-lb$_f$/lb$_m$-°R
Re/ft	RE/FT	free stream unit Reynolds number, ft^{-1}
	ROLL-MODEL	model roll angle, deg.
	ST(TO)	Stanton number based on T_o:

$$ST(TO) = \frac{H(TO)}{\rho_\infty V_\infty [.2235 + 1.35\times10^{-4}(T_o + 560)]\times 32.17}$$

NOMENCLATURE (Continued)

SYMBOL	COMPUTER SYMBOL	DEFINITION
	STREF	reference Stanton number: $ST(TO) = \frac{HREF}{\rho_\infty V_\infty [.2235 + 1.35x10^{-4}(T_o + 560)] x32.17}$
T_{aw}		adiabatic wall temperature, ^oF
$\bar{T}$	TBAR	$\frac{T_{pc} - T_{IN}}{T_{aw} - T_{IN}}$
T_{IN}		initial model temperature, ^oF
T_∞	T-INF	free stream static temperature-^oR
T_{pc}	TPC	paint melt temperature, ^oF
T_o	TO	tunnel stilling chamber temperature, ^oR
t	TIME	time from start of model injection, sec.
Δt	DEL TIME	time model exposed to airstream, sec.
V_e		velocity at edge of the boundary layer, ft/sec.
V_∞	V-INF	free stream velocity, ft/sec.
X		longitudinal coordinate
α	ALPHA-MODEL	model angle of attack, deg.
α_p	ALPHA-PREBEND	sting prebend angle, deg.
α_s	ALPHA-SECTOR	tunnel sector pitch angle, deg.
β		defined in context
γ		ratio of specific heats of air
k	K	model thermoconductivity, BTU/ft-sec-^oF
μ_∞	MU-INF	free stream viscosity, lb-sec/ft^2
μ_s		stagnation air viscosity, lb-sec/ft^2

NOMENCLATURE (Concluded)

SYMBOL	COMPUTER SYMBOL	DEFINITION
μ_w		air viscosity along model wall, $lb_m/ft\text{-}sec$
ρ	RHO	model material density, lb_m/ft^3
ρ_w		air density along model wall, lb_m/ft^3
ρ_s		stagnation air density, lb_m/ft^3
ρ_∞	RHO-INF	free stream air density, $slug/ft^3$
ψ	YAW	model yaw angle, deg.

CONFIGURATIONS INVESTIGATED

The models were 0.040 scale representations of the forward 50% of the Rockwell International Space Shuttle Orbiter. The models conformed to Rockwell lines VL70-000140C.

Five (5) different models were utilized. They were designated as 82-1, 82-3, 82-5, 82-8, and 82-11. The -1, -3, and -5 were made of Grumman proprietary material 'G' cast on a steel sting. Models 82-8 and 82-11 were cast from Lockheed proprietary material "LH" on a steel sting. Shrinkage during curing of the cast models reduced the scale of each model to 0.0397. Differences in the models were as follows:

Model No.	Test Configuration No.	Definition
82-1	1	Paint stripe model used as reference for model coordinate system. Figure 3 defines its grid system.
82-3	3	Smooth model with no protuberances, gaps, grooves, or boundary layer tripping devices; used to define control (or baseline) data.
82-5	5	Model with simulated landing gear door gaps nominally 0.030 in. wide by 0.080 in. deep as shown on Figure 2a.
82-8	8	Model with simulated reuseable carbon carbon-high temperature reuseable surface interface (RCC-HRSI) on the lower surface. The interface was simulated by a transverse gap 0.040 inch wide by 0.080 inch deep 2% of body length aft of the nose as shown in Figure 2b.

CONFIGURATIONS INVESTIGATED (Concluded)

Model No.	Test Configuration No.	Definition
82-11	11	Model with a stainless steel insert located 11.1% of body length aft of the nose on the lower surface. Interchangeable trip rings consisting of stainless steel balls spot welded to a contoured fuselage segment were fit into the insert. Trip rings with 0.000 (no balls), 0.015, 0.020, 0.031, and 0.039 inch diameter balls were tested. See Figure 2c.

The body length (total orbiter fuselage length referred to above) is 1293.3 inches, full scale.

Model dimensional data are given in Table III.

TEST FACILITY DESCRIPTION

The Arnold Engineering Development Center (AEDC) is an Air Force Facility located in Tullahoma, Tennessee. The tunnel used, Tunnel B, is located in the von Karman Facility portion of this center. Engineering and other technical operations in this tunnel are performed by contractor personnel of ARO, Inc.

Tunnel B is a continuous, closed circuit, variable density wind tunnel with an axisymmetric contoured nozzle and a 50-inch diameter test section. The tunnel can be operated at a nominal Mach number of 6 or 8 at stagnation pressures from 20 to 300 and 50 to 900 psia, respectively, and at a stagnation temperature of up to 1350°R. The model may be injected into the tunnel for a test run and then retracted for model cooling or model changes without interrupting the tunnel flow.

TEST PROCEDURE

Tempilaq®, a fusible coating that changes phase from an opaque solid to a transparent liquid at temperatures specified by the manufacturer, was used to indicate the location of isotherms on the model surface. The paints used had melting temperatures of 150, 175, 200, 250, 300, 350 and 400 degrees Fahrenheit.

A Beattie-Coleman Varitron® 70 mm sequence camera was used to record the progression of isotherms on the windward surface as a function of time during each test run. The camera was located on the top of the wind tunnel and photographed the bottom surface of the Orbiter models. The camera was operated at a nominal rate of 1 frame/sec. Kodak TRI-X Pan® black-and-white film was used.

Dual television monitors were used throughout the test to further record the effects of planform area reduction on heating rates and to facilitate on-line cross-referencing.

Prior to each test run, the model was cleaned with a solvent, spray-painted with the phase-change coating, and allowed to reach isothermal conditions. The model was then injected into the wind tunnel for about 30 seconds, during which time the progression of the isotherms, indicated by the demarcation between melted and unmelted coating, was continuously photographed. The model was then retracted from the wind tunnel and the cycle repeated for the next run. The model temperature was measured prior to each run using a thermocouple probe.

Test conditions are presented in Table I and a test summary is in Table II.

DATA REDUCTION

Thin film heat transfer coefficients were calculated for each melt line at which photographs were taken. The coefficients were calculated assuming three different recovery factors:

$$\frac{T_{aw}}{T_o} = 0.867,\ 0.90,\ \text{and } 1.0$$

The following calculations were then performed to obtain thin film coefficients:

$$\bar{T} = \frac{T_{pc} - T_{IN}}{T_{aw} - T_{IN}}$$

$$T_{aw} = \left(\frac{T_{aw}}{T_o}\right) x\ T_o$$

$$h = \frac{\beta\sqrt{k\rho C_p}}{\sqrt{t}}$$

where the flow parameter β results from iterative solution of:

$$1 - \bar{T} = e^{\beta^2}\ (1 - \text{erf}\ \beta)$$

Theoretical thin film heat transfer coefficients and stagnation point heating rates were calculated using the equations given below:

$$h_s = (.768)(C_p)(P_r^{-.6})(\rho_w\mu_w)^{.1}(\rho_e\mu_s)^{.4}\sqrt{\frac{dVe}{dx}}$$

where

$P_r = \frac{\mu C_p}{k}$ (μ, C_p and k for air)

$\frac{dVe}{dx}$ = The streamwise velocity gradient along the model surface

and

$$\frac{dVe}{dx} = \frac{1}{N_r} \sqrt{2\, Rg\, T_o \left(1 - \frac{1}{P_1 P_2}\right)}$$

N_r = Nose radius, .040 foot radius (1 foot full scale)

$$P_1 = \left[\frac{\gamma + 1}{2} M_\infty^2\right]^{\frac{\gamma}{\gamma - 1}}$$

$$P_2 = \left[\left(\frac{\gamma + 1}{2\gamma M_\infty^2 - (\gamma - 1)}\right)\right]^{\frac{\gamma}{\gamma - 1}}$$

Melt lines have been traced from selected photographs taken during the test and are presented at the back of this report. Only Orbiter bottom surface tracings were obtained during this test. Each melt line on the tracings is identified by a number corresponding to a picture number. Thin film coefficients and free stream data corresponding to each picture number are presented on pages following each tracing. Station numbers of melt lines on each tracing can be determined using sketches of grid patterns in Appendix A corresponding to each model attitude that was tested.

RESULTS AND DISCUSSION

Uncertainties of the basic tunnel parameters were estimated from repeat calibrations of the PO and TO instruments and from the repeatability and uniformity of the tunnel flow during calibrations. The parameters PO, TO, and MACH NO. with their uncertainties were then used to compute the uncertainties in the other parameters dependent on these by means of the Taylor series method of error propagation.

Uncertainty, percent			
MACH NO.	PO	TO	RE/FT
± 0.3	± 0.5	± 0.5	± 1.2

An estimate of the data precision of phase change paint data is hampered by the fact that an observer must determine the location of the melt line. For this analysis, only uncertainties attributable to the measured parameters are considered. The parameters needed for the solution of the equation for the heat-transfer coefficient, h, are T_{pc}, T_{IN}, T_{aw}, $\sqrt{\rho k C_p}$, and Δt. The table below summarizes the nominal uncertainties in these specific parameters.

Parameter	Uncertainty (+)
Δt	± 1.0
$\sqrt{\rho k C_p}$	± 10.0
T_{IN}	± 0.5
T_o (T_{aw})	± 1.0
T_{pc}	± 0.5

RESULTS AND DISCUSSION (Concluded)

It should be remembered that the above uncertainties in T_{aw} and and T_{pc} only reflect nominal measurement uncertainties. As previously mentioned, the interpretation of when phase change occurs (i.e., T_{pc}) is a matter of observer experience, and the "correct" assumption of what should be used for T_{aw} also requires engineering judgment. However, combining the above measurement uncertainties with the corresponding error sensitivity factor (derived by using the equation for the heat-transfer coefficient, h, and taking the square root of the sum of the squares) yields the following:

for $T_{pc} \leq 200^{\circ}F$, h uncertainty $\approx \pm 13$ percent

for $T_{pc} > 200^{\circ}F$, h uncertainty $\approx \pm 11$ percent

REFERENCES

1) Hube, F. K., "NASA/RI OH54 Shuttle Transition Test Final Data," AEDC VKF Tunnel B Project V41B-82A, October, 1974.

2) Cummings, J. W., "Pretest Information For Phase Change Paint Tests on .040 Scale 50% Forebody Models of the Rockwell International Space Shuttle Orbiter in the AEDC 'B' Hypersonic Wind Tunnel. OH54," SD74-SH-0254, Rockwell International, September, 1974.

TABLE I

TEST CONDITIONS

M_∞	P_o, psia	T_o, ^oR	h_s, $\frac{Btu}{ft^2\text{-}sec\text{-}^oR}$	Re/ft x 10^{-6}
7.93	155	1270	0.014	0.75
7.94	210	1275	0.016	1.00
7.95	265	1280	0.018	1.25
7.96	320	1290	0.020	1.50
7.97	375	1295	0.022	1.75
7.98	425	1300	0.023	2.00
7.98	490	1310	0.025	2.25
7.99	555	1320	0.026	2.50
7.99	610	1325	0.027	2.75
7.99	670	1330	0.029	3.00
8.00	735	1330	0.030	3.25
8.00	800	1335	0.031	3.50

TABLE II.

TEST SUMMARY

Re/ft $\times 10^{-6}$	Configuration	Gap		Trip		Angle of Attack					
						20		30		40	
		Width	Depth	x/ℓ	Diameter	T_{pc}	Group	T_{pc}	Group	T_{pc}	Group
1.25	#3-Smooth	0	0	0	0					250	74
1.50								175	71	250	70
2.00								250	72	250	73
1.00	#5-Landing	0.030	0.080							250	69
1.25	gear door	(nominal)	(nominal)					250	67	300	68
1.50								250	64	300	65
1.75								250	66		
2.00								250	62	350	63
2.50						300	58	250	56	400	59
2.75						300	61	350	57		
3.00						300	60				
1.50	#8-RCC-HRSI	0.040	0.080			175	41	250	39	250	40
2.00		(nominal)	(nominal)			175	44			250	43
2.25						175	47			300	46
3.00						250	50	300	48	300	49
3.50						250	53	300	51	350	55
3.50								300	52		
3.50								300	54		
1.50	#11-Trip ring	-	-	0.110		250	1				
2.00								275	103	300	104
2.50								275	99	350	100
3.50						275	109	350	107	350	108
3.25					0.015					400	112
3.50								350	110	400	111
1.50					0.020			250	2		
1.75										300	18
2.00								250	3	350	102

TABLE II. - Continued.

TEST SUMMARY

Re/ft $\times 10^{-6}$	Configuration	Gap		Trip		Angle of Attack					
						20		30		40	
		Width	Depth	X/ℓ	Diameter	T_{pc}	Group	T_{pc}	Group	T_{pc}	Group
2.00	#11-Trip ring	-	-	0.110	0.020			300	4		
								300	5		
								400	6		
								350	7		
2.25								300	16	400	17
2.50								350	8	350	101
2.75						350	13	350	12	350	14
2.75						300	15				
3.00								350	9		
3.50								350	10		
3.50								400	11		
1.00					0.031			175	23	300	25
1.00								250	24		
1.25								250	21	300	22
1.50								250	76	300	27
1.75								250	19	350	20
2.00						250	31	300	29	350	30
2.25						300	35	350	34		
2.50						300	33	350	32		
2.75						350	38				
3.00						350	36	400	37		
3.25						350	105				
3.50						350	106				
0.80					0.039			150	84	250	85
1.00						175	83	175	81	250	82

TABLE II. - Concluded.

TEST SUMMARY

Re/ft $\times 10^{-6}$	Configuration	Gap		Trip		Angle of Attack					
						20		30		40	
		Width	Depth	X/ℓ	Diameter	T_{pc}	Group	T_{pc}	Group	T_{pc}	Group
1.25	#11-Trip ring	-	-	0.110	0.039	175	80	250	78	300	79
1.50	↓	↓	↓	↓	↓	175	77	250	75	300	76
1.75	↓	↓	↓	↓	↓	175	91	250	87	400	88
1.75	↓	↓	↓	↓	↓	250	92			350	89
1.75	↓	↓	↓	↓	↓					350	90
2.00	↓	↓	↓	↓	↓	250	94	300	93		
2.25	↓	↓	↓	↓	↓	275	96	350	95		
2.50	↓	↓	↓	↓	↓	300	97				

TABLE III

MODEL DIMENSIONAL DATA

MODEL COMPONENT: BODY - B60

GENERAL DESCRIPTION: 50% orbiter forebody, vehicle 140C.

NOTE: This body includes a small portion of the wing glove.

MODEL SCALE: 0.040

DRAWING NUMBER: VL70-000140C

DIMENSIONS:

	FULL SCALE	MODEL SCALE
Length	645.15	25.80
Max Width	330.00	13.20

TABLE III (Concluded)

MODEL DIMENSIONAL DATA

MODEL COMPONENT: CANOPY - C_{10}

GENERAL DESCRIPTION: Configuration 4 canopy and windshield as used with B_{25}, six glass panes in windshield

MODEL SCALE: 0.040

DRAWING NUMBER: VL70-000140B, 140C, 202B

DIMENSIONS:	FULL SCALE	MODEL SCALE
Length (X_o = 434.643 to 670) In.	235.357	9.414
Max Width		
Max Depth Glass - In.	28.00	1.12
Nose/windshield intersection, X_o =	434.643	17.386

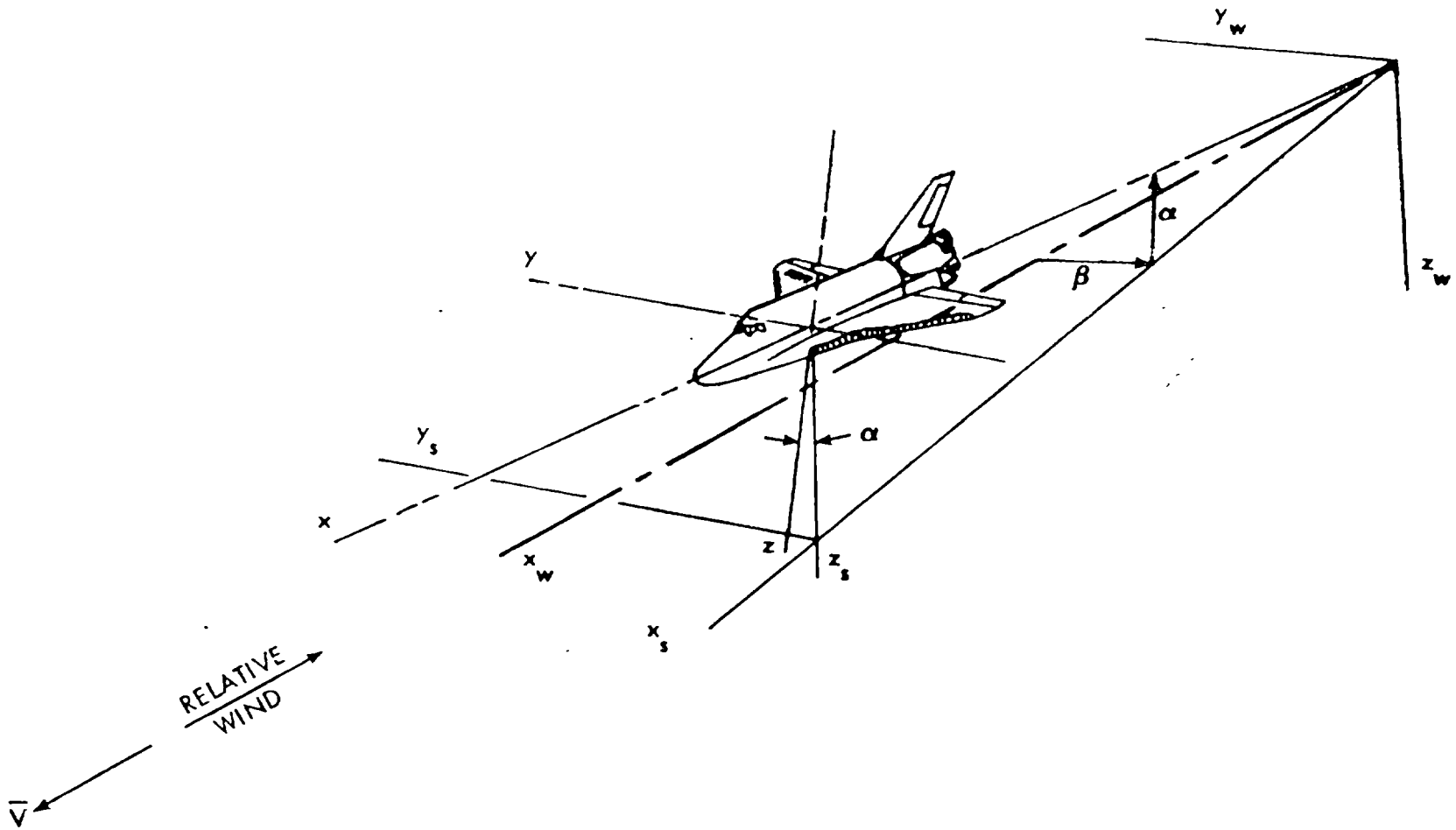
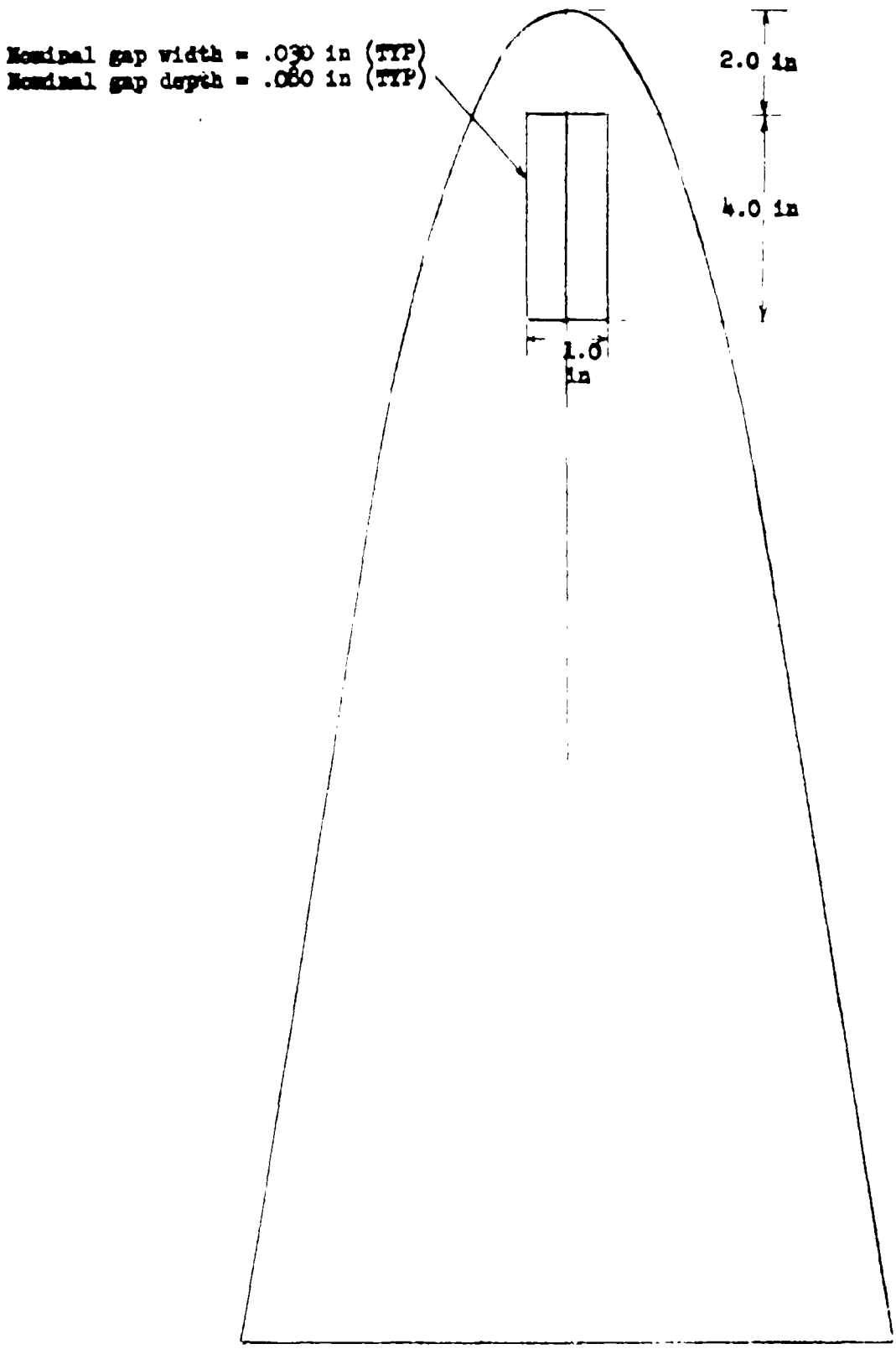
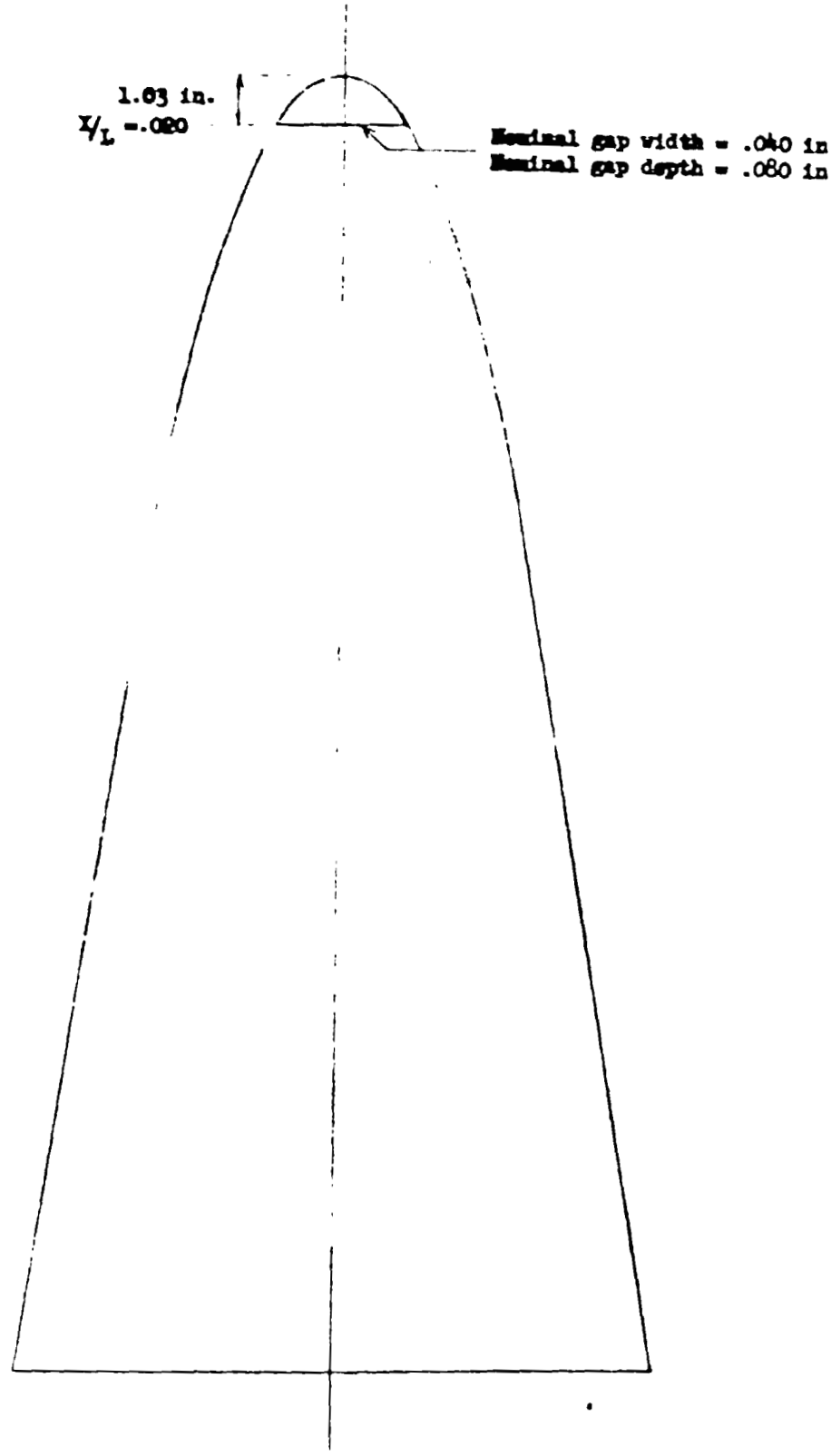


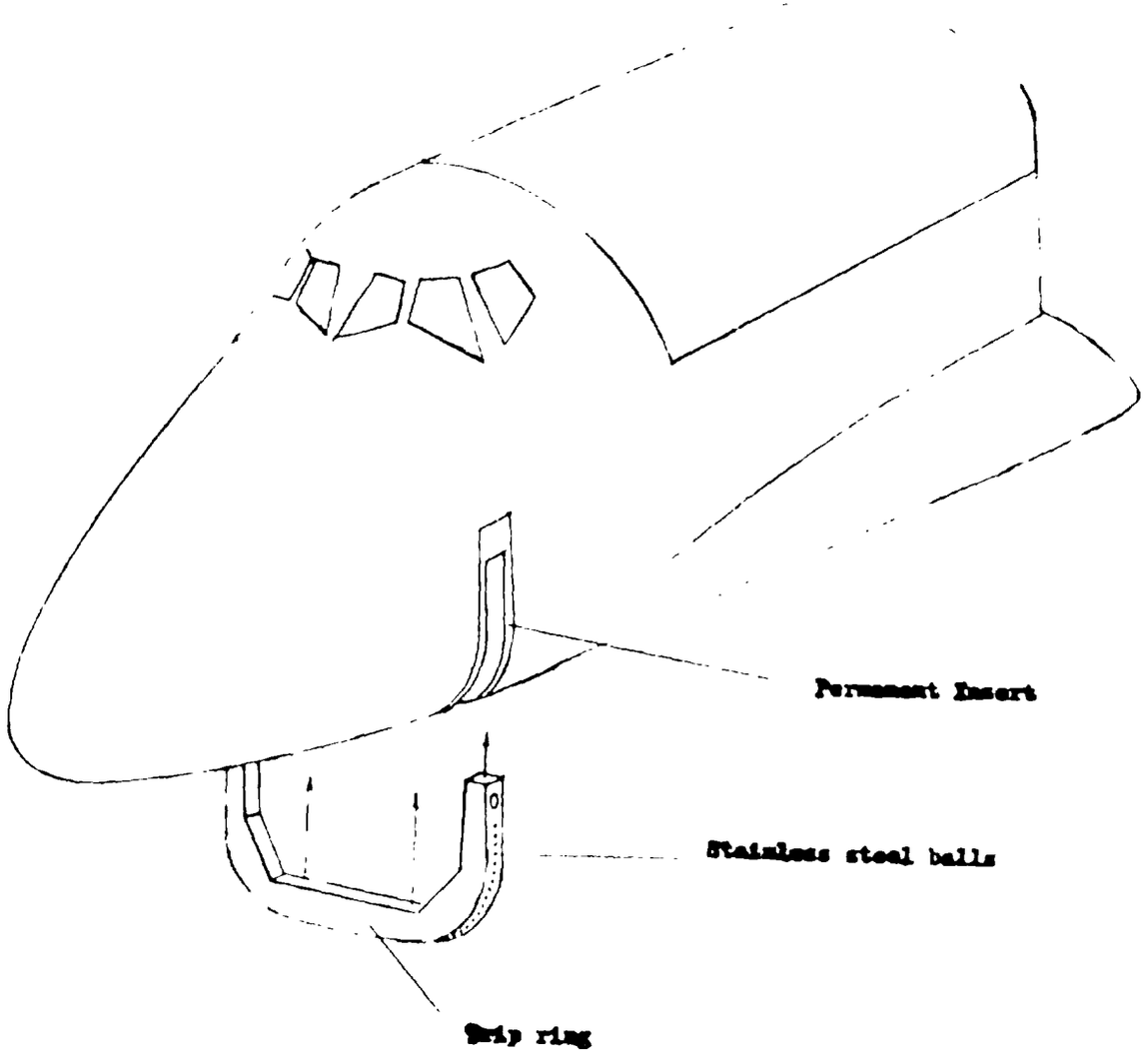
Figure 1. Axis Systems.



a. Landing Gear Door Simulation
Figure 2. - Model Sketches



b. RCC-HRSI Interface Simulation
Figure 2 (Continued)



c. Model 82-11 Trip Ring Insert
Figure 2. (Continued)

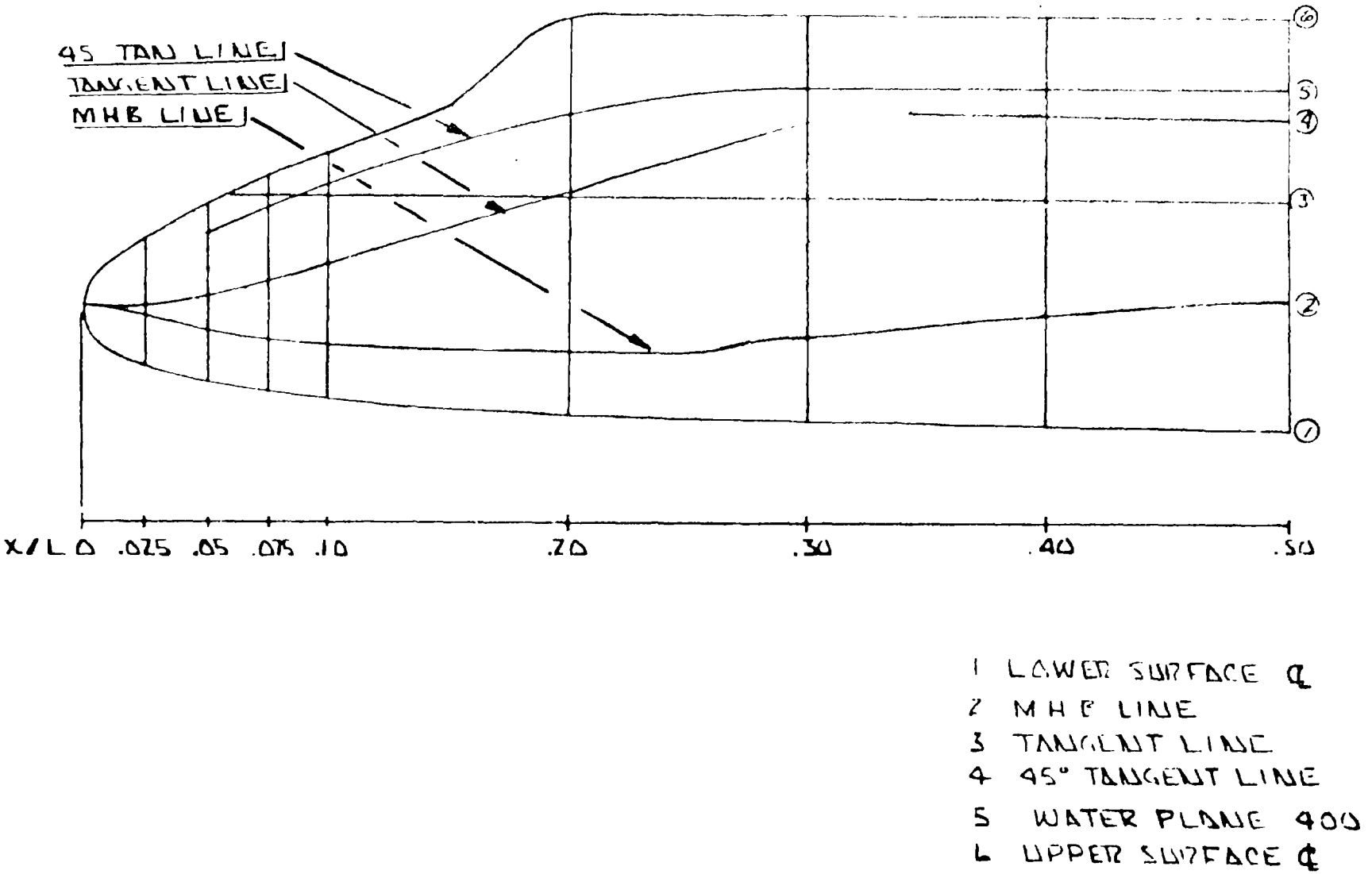


Figure 3. Paint Stripe Model Grid Locations

APPENDIX A

GRID TRACINGS

α deg.	Page
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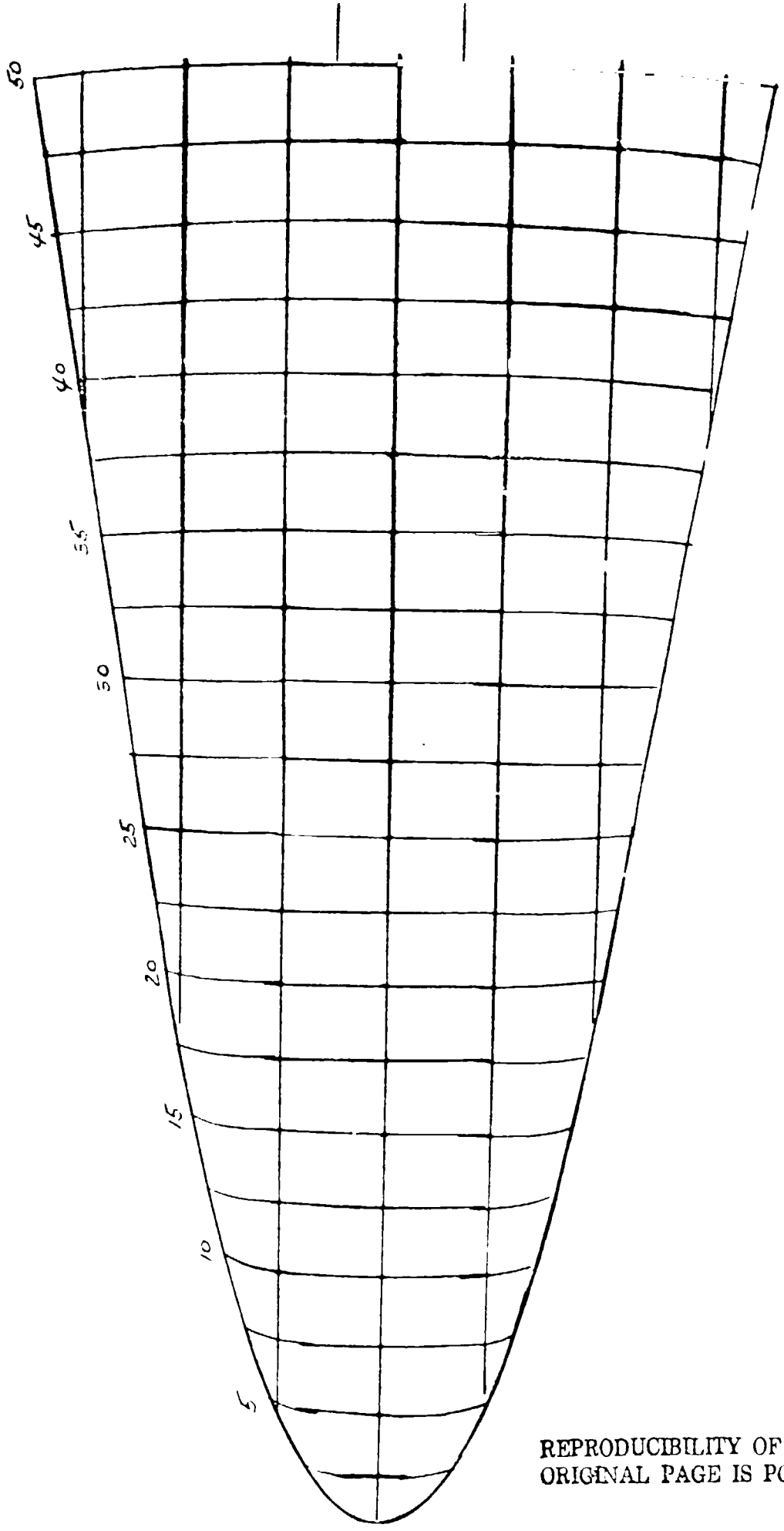
25	29
30	30
35	31
40	32



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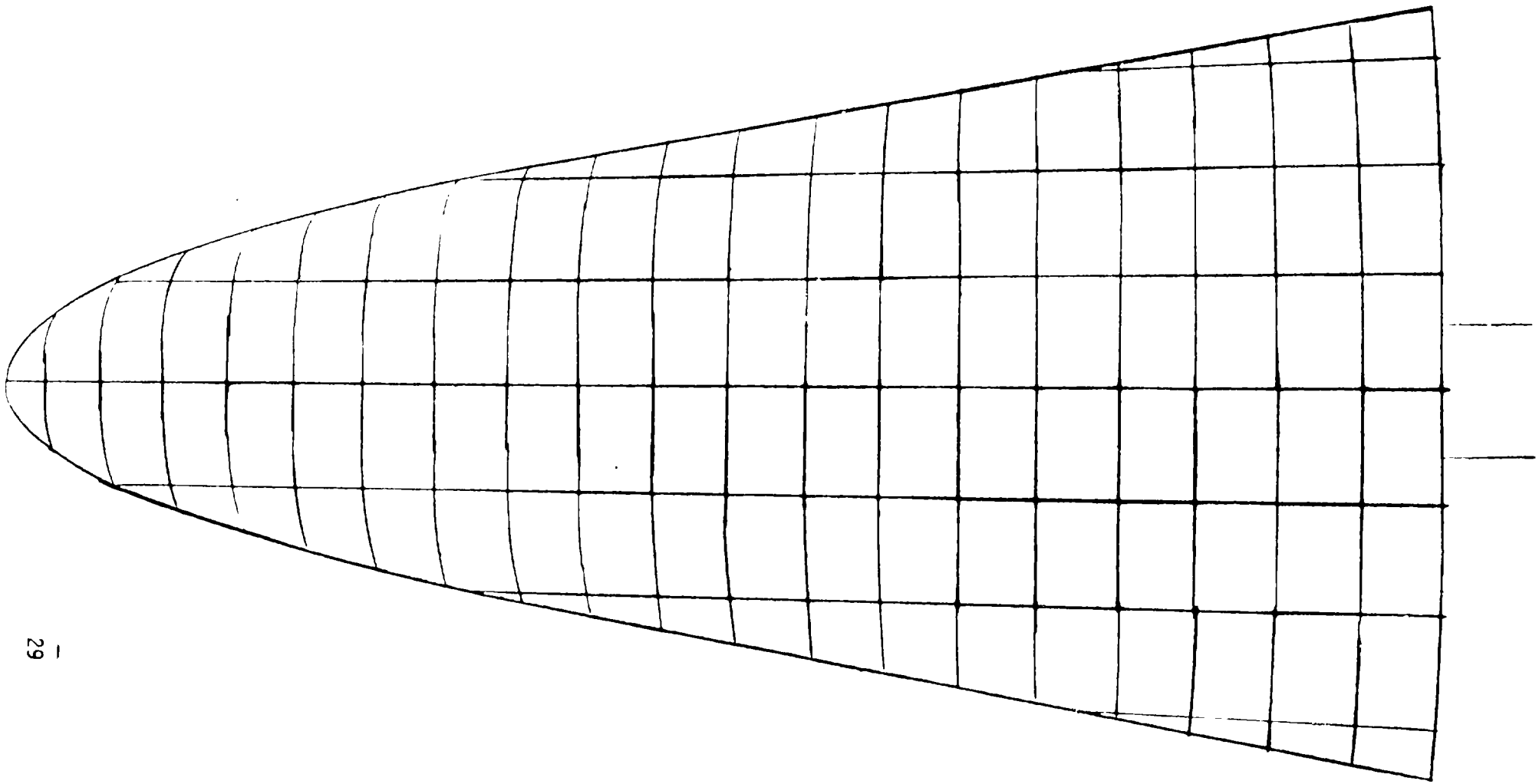
599
#0296

1599
0305

$\alpha = 25°$



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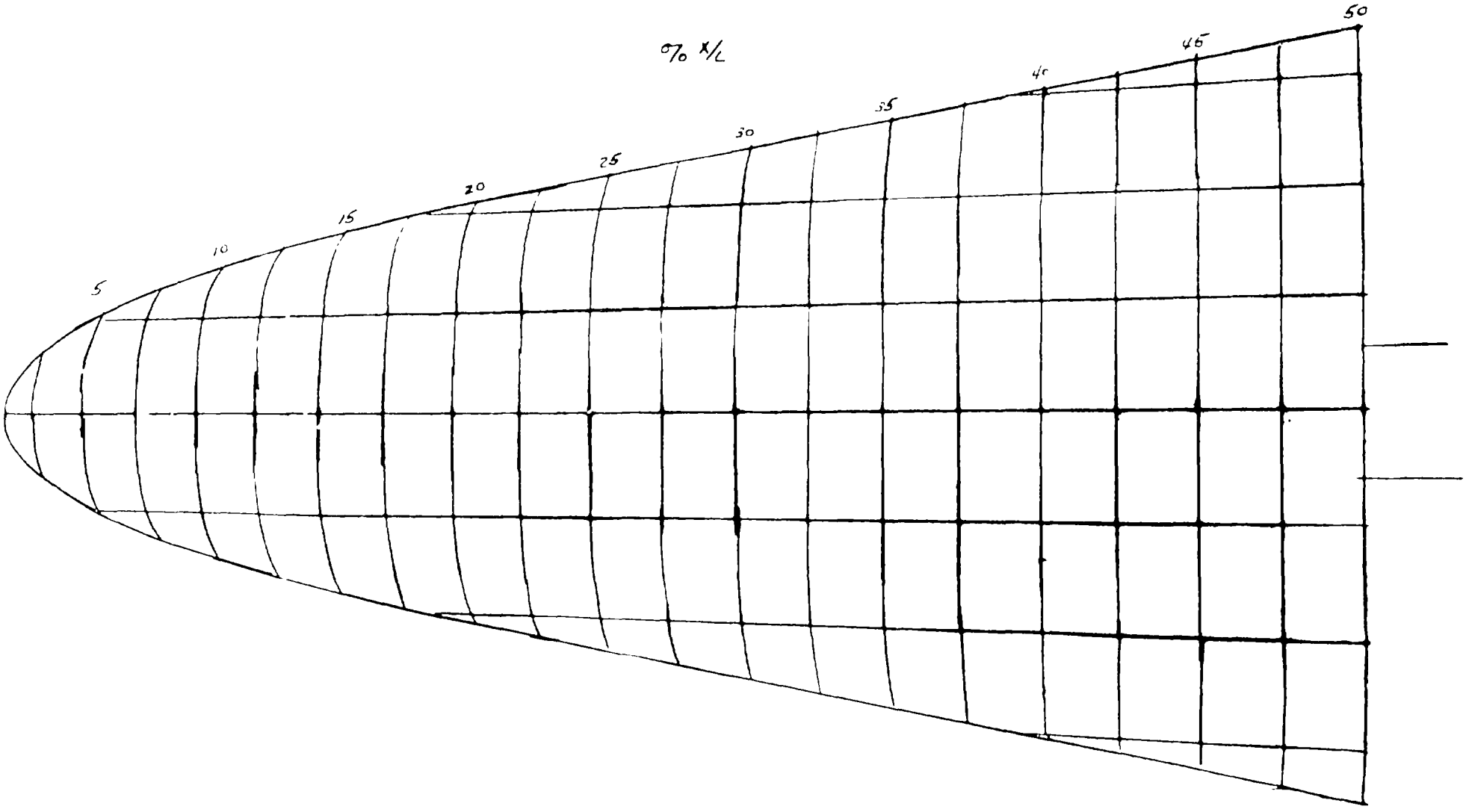

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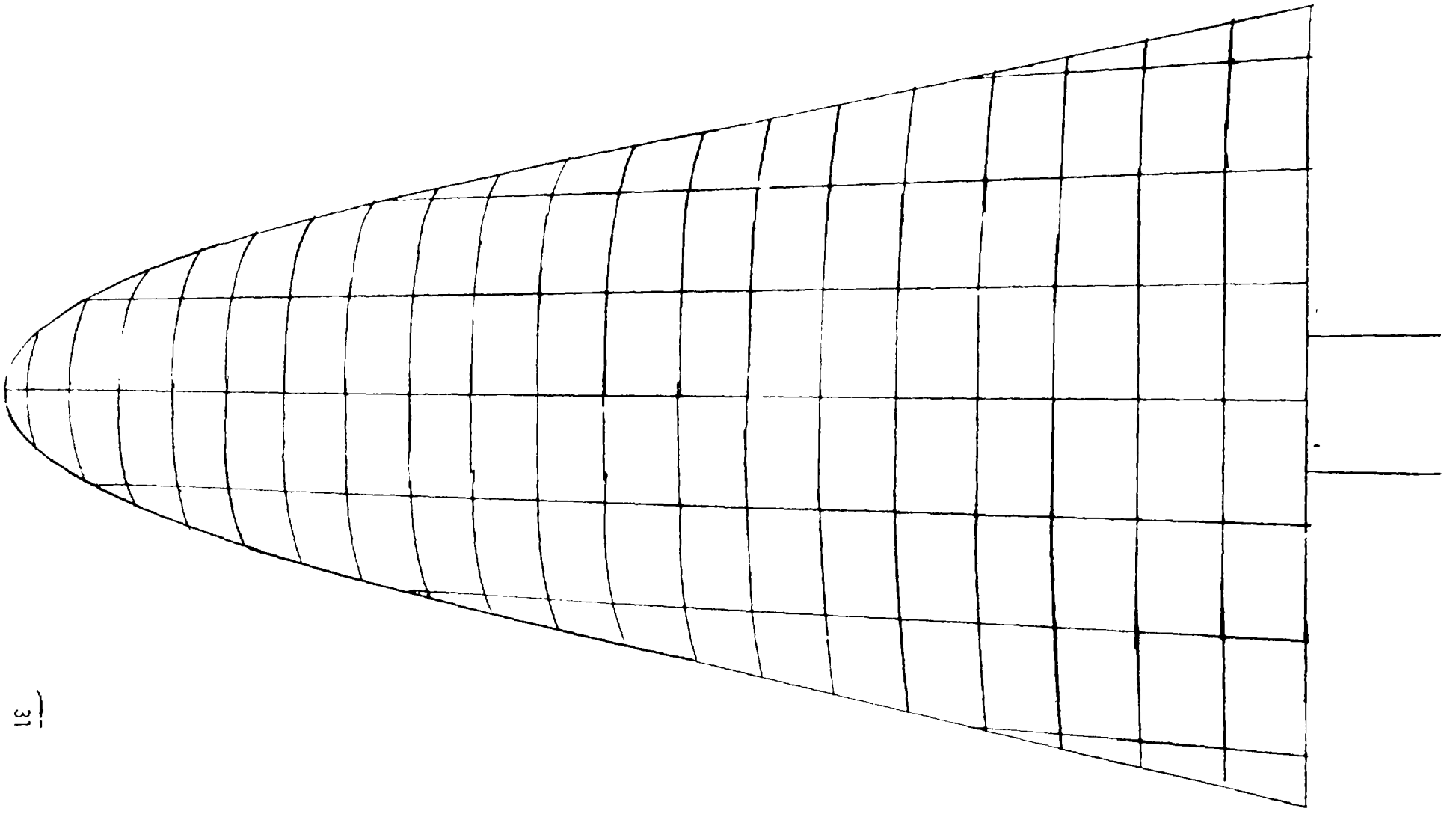

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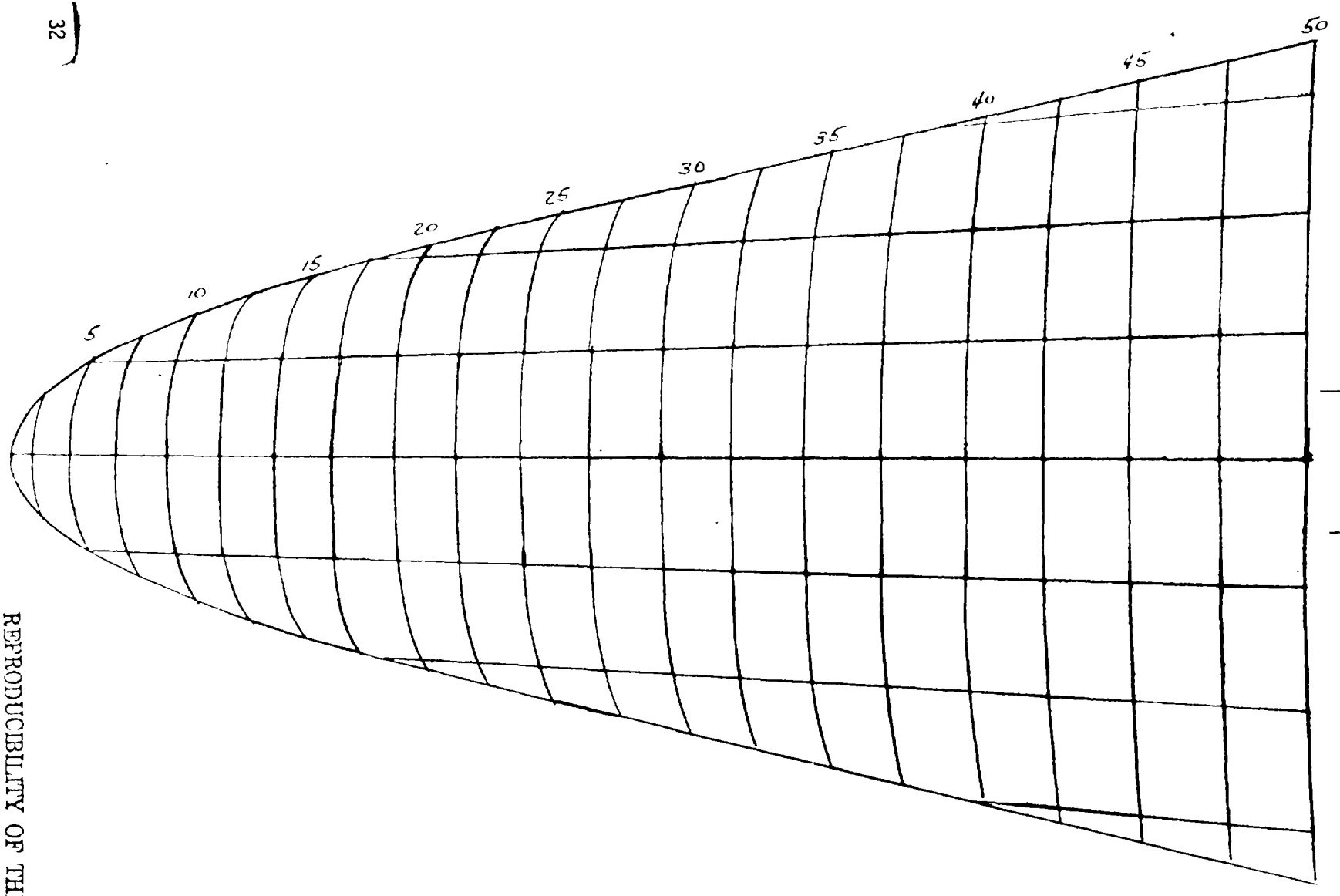


APPENDIX B

TABULATED DATA AND ISOTHERM CONTOURS

Note: Data are presented in order of increasing group number. Freestream conditions are given for oil flow visualization runs. No oil flow visualization photographs are presented.

389

$\alpha = 30°$

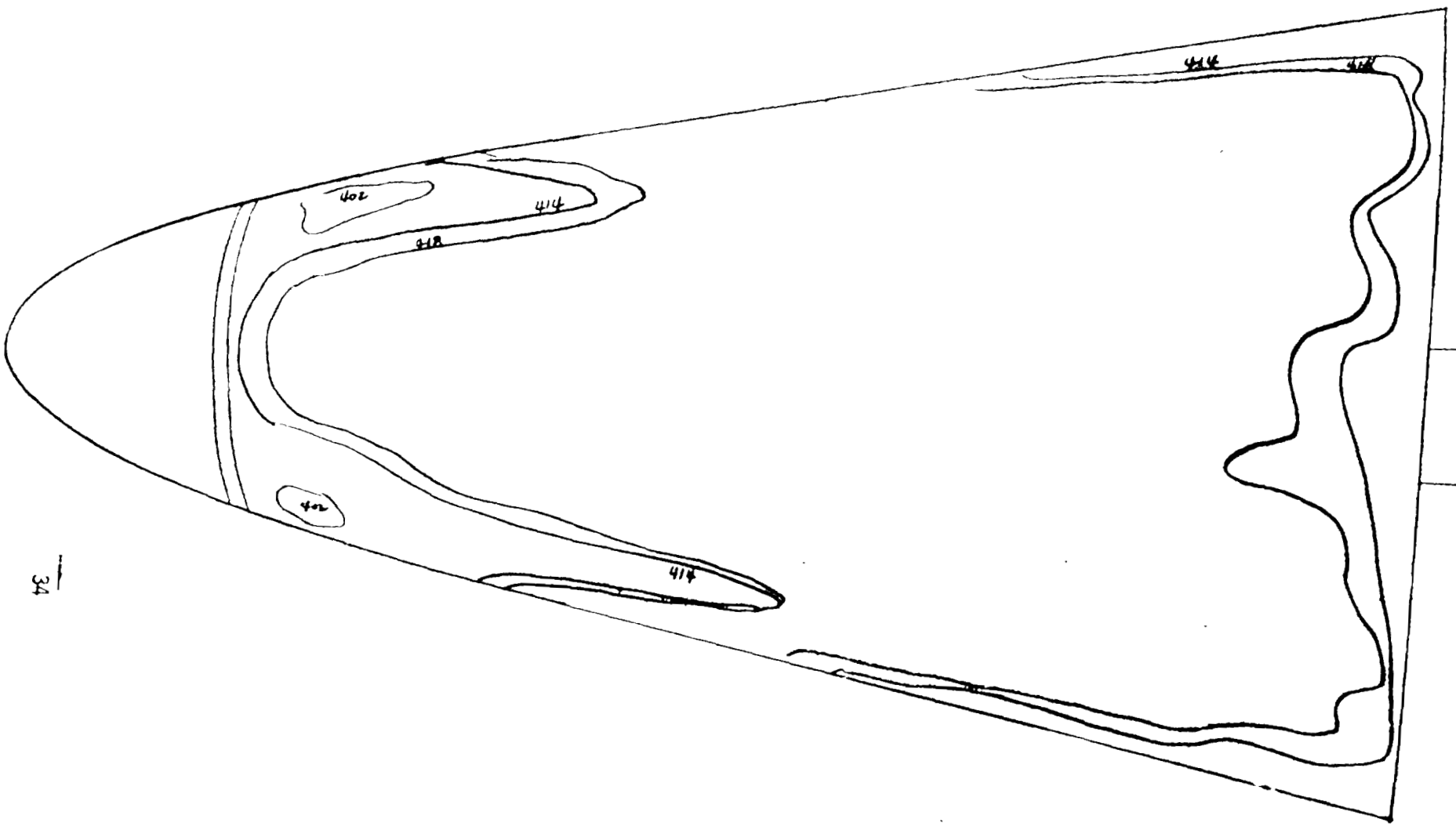
384 1st Fr ℄

Grp 1

P_o = 320 PSIA T_{PC} = 250°F

T_o = 830°F

R_N = 1.54×10^6 / ft



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
1	11	TRIP					.110	0	7.289E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.90	324.0	1279	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	SIREF (RE .060 FT)
93.5	.236	1.521	3772	3.076E-05	7.53JE-06	1.541E 06	1.998E-02	2.170E-02

CAPSLA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WMCACRK)	TRAR(TO)	BETA(TO)
10F(T)	389					
5IOF(S)	424	250	85	.0617	2.249E-01	2.4362E-01
56						

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 381(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
5 2107(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
IN-EFCT TIME =		1.63							
5 2108(250)	2.55	1.65	1.170E-02	.5456	1.490E-02	.7457	1.441E-02	.7212	1.252E-02
1 382(250)	2.57	1.67	1.181E-02	.5913	1.478E-02	.7401	1.430E-02	.7158	1.242E-02
1 383(250)	3.82	2.73	9.125E-03	.4557	1.159E-02	.5802	1.121E-02	.5612	9.739E-03
5 2109(250)	3.82	2.73	9.125E-03	.4557	1.159E-02	.5802	1.121E-02	.5612	9.739E-03
56		3.92							
1 384(250)	4.70	3.80	7.776E-03	.3858	9.814E-03	.4913	9.492E-03	.4752	8.247E-03
5 2110(250)	4.70	3.80	7.776E-03	.3858	9.814E-03	.4913	9.492E-03	.4752	8.247E-03
1 385(250)	5.75	4.85	6.922E-03	.3415	8.687E-03	.4349	8.402E-03	.4206	7.300E-03
5 2111(250)	5.75	4.85	6.922E-03	.3415	8.687E-03	.4349	8.402E-03	.4206	7.300E-03
1 386(250)	6.83	5.93	6.172E-03	.3040	7.859E-03	.3935	7.601E-03	.3805	6.604E-03
5 2112(250)	6.83	5.93	6.172E-03	.3040	7.859E-03	.3935	7.601E-03	.3805	6.604E-03
1 387(250)	7.90	7.01	5.378E-03	.2843	7.231E-03	.3620	6.993E-03	.3501	6.076E-03
5 2113(250)	7.90	7.01	5.378E-03	.2843	7.231E-03	.3620	6.993E-03	.3501	6.076E-03
1 388(250)	8.95	8.06	5.245E-03	.2651	6.743E-03	.3376	6.521E-03	.3265	5.666E-03
5 2114(250)	8.95	8.06	5.245E-03	.2651	6.743E-03	.3376	6.521E-03	.3265	5.666E-03
1 389(250)	10.03	9.13	4.973E-03	.2490	6.333E-03	.3170	6.125E-03	.3066	5.322E-03
5 2115(250)	10.03	9.13	4.973E-03	.2490	6.333E-03	.3170	6.125E-03	.3066	5.322E-03
1 390(250)	11.08	10.19	4.710E-03	.2358	5.997E-03	.3002	5.801E-03	.2904	5.039E-03
5 2116(250)	11.11	10.21	4.705E-03	.2356	5.990E-03	.2999	5.793E-03	.2900	5.033E-03
1 391(250)	12.16	11.24	4.474E-03	.2242	5.704E-03	.2855	5.516E-03	.2762	4.793E-03
5 2117(250)	12.16	11.24	4.474E-03	.2242	5.704E-03	.2855	5.516E-03	.2762	4.793E-03
1 392(250)	13.23	12.34	4.279E-03	.2142	5.449E-03	.2728	5.270E-03	.2638	4.579E-03
5 2118(250)	13.23	12.34	4.279E-03	.2142	5.449E-03	.2728	5.270E-03	.2638	4.579E-03

VALUE CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
1	11	TRIP					.110	0	7.249E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.96	324.0	1279	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUG-S/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HWEF (W= .040 FT)	STREF (W= .040 FT)
93.5	.034	1.521	3772	3.370E-05	7.530E-08	1.541E 04	1.998E-02	2.170E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKM)	TR/R(TO)	BETA(TO)
SILK(S)	229					
36	024	250	85	.0617	2.249E-01	2.4362E-01

	PIC NO	TIME	RELTIME	H(TO)	H(TO)/HWEF	H(.9TO)	H(.9TO)/HWEF	H(.912TO)	H(.912TO)/HWEF	ST(TO)
1	393(250)	14.29	13.39	4.10E-03	.2056	5.231E-03	.2619	5.054E-03	.2533	4.395E-03
5	2114(250)	14.29	13.39	4.10E-03	.2056	5.231E-03	.2619	5.054E-03	.2533	4.395E-03
1	394(250)	14.36	14.47	3.95E-03	.1978	5.033E-03	.2519	4.867E-03	.2437	4.229E-03
5	2120(250)	14.36	14.47	3.95E-03	.1978	5.033E-03	.2519	4.867E-03	.2437	4.229E-03
1	395(250)	14.41	15.52	3.81E-03	.1910	4.854E-03	.2433	4.700E-03	.2353	4.083E-03
5	2121(250)	14.44	15.56	3.81E-03	.1909	4.855E-03	.2431	4.696E-03	.2351	4.080E-03
1	396(250)	17.49	14.55	3.69E-03	.1847	4.699E-03	.2352	4.545E-03	.2275	3.948E-03
5	2122(250)	17.49	14.55	3.69E-03	.1847	4.699E-03	.2352	4.545E-03	.2275	3.948E-03
1	397(250)	14.57	17.67	3.57E-03	.1790	4.553E-03	.2280	4.404E-03	.2205	3.826E-03
5	2123(250)	14.57	17.67	3.57E-03	.1790	4.553E-03	.2280	4.404E-03	.2205	3.826E-03
1	398(250)	14.62	18.72	3.47E-03	.1739	4.424E-03	.2215	4.274E-03	.2142	3.717E-03
5	2124(250)	14.62	18.72	3.47E-03	.1739	4.424E-03	.2215	4.274E-03	.2142	3.717E-03
1	399(250)	21.63	19.8[illegible]	3.37E-03	.1691	4.302E-03	.2154	4.161E-03	.2083	3.615E-03
5	2125(250)	21.69	19.8[illegible]	3.37E-03	.1691	4.302E-03	.2154	4.161E-03	.2083	3.615E-03
1	400(250)	21.77	21.87	3.24E-03	.1607	4.189E-03	.2097	4.052E-03	.2029	3.520E-03
5	2126(250)	21.77	21.87	3.24E-03	.1607	4.189E-03	.2097	4.052E-03	.2029	3.520E-03
1	401(250)	22.82	21.92	3.21E-03	.1607	4.08[illegible]E-03	.2046	3.954E-03	.1979	3.435E-03
5	2127(250)	22.82	21.92	3.21E-03	.1607	4.08[illegible]E-03	.2046	3.954E-03	.1979	3.435E-03
1	402(250)	23.90	23.00	3.13E-03	.1569	3.991E-03	.1998	3.860E-03	.1932	3.354E-03
5	2128(250)	23.90	23.00	3.13E-03	.1569	3.991E-03	.1998	3.860E-03	.1932	3.354E-03
1	403(250)	24.95	24.05	3.05E-03	.1534	3.903E-03	.1954	3.775E-03	.1890	3.280E-03
5	2129(250)	24.97	24.09	3.03E-03	.1534	3.901E-03	.1953	3.773E-03	.1889	3.278E-03
1	404(250)	26.02	25.13	2.99E-03	.1501	3.818E-03	.1912	3.693E-03	.1849	3.209E-03
5	2130(250)	26.02	25.13	2.99E-03	.1501	3.818E-03	.1912	3.693E-03	.1849	3.209E-03
1	405(250)	27.10	26.21	2.93E-03	.1470	3.739E-03	.1872	3.616E-03	.1810	3.142E-03
5	2131(250)	27.10	26.21	2.93E-03	.1470	3.739E-03	.1872	3.616E-03	.1810	3.142E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REQ
1	11	TRIP					.110	0	7.289E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	326.0	1279	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	U-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	SIREF
93.5	.034	1.521	3772	3.378E-05	7.530E-08	1.541E 04	1.998E-02 (H= .040 FT)	2.170E-02 (H= .040 FT)

LAPFCA (DEG F)	WALL NO POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOLACKA)	TRAN(TO)	META(TO)
	289				
SILE(S)	424 250	85	.0617	2.249E-01	2.4362E-01
SG					

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.9120)	H(.9120)/HREF	ST(TO)
I	406(250)	24.15	27.24	2.879E-03	.1441	3.666E-03	.1835	3.546E-03	.1775	3.081E-03
S	2132(250)	24.15	27.24	2.879E-03	.1441	3.666E-03	.1835	3.546E-03	.1775	3.081E-03
I	407(250)	24.23	24.33	2.824E-03	.1414	3.596E-03	.1800	3.478E-03	.1741	3.022E-03
S	2133(250)	24.23	24.33	2.824E-03	.1414	3.596E-03	.1800	3.478E-03	.1741	3.022E-03
I	408(250)	30.30	29.41	2.772E-03	.1388	3.530E-03	.1767	3.416E-03	.1709	2.966E-03
I	409(250)	31.36	31.44	2.726E-03	.1363	3.470E-03	.1736	3.416E-03	.1709	2.966E-03
S	2135(250)	31.36	31.44	2.726E-03	.1363	3.470E-03	.1736	3.354E-03	.1679	2.914E-03
I	41 (250)	32.43	31.56	2.677E-03	.1340	3.410E-03	.1706	3.354E-03	.1679	2.914E-03
S	2136(250)	32.43	31.56	2.677E-03	.1340	3.410E-03	.1706	3.297E-03	.1650	2.864E-03
I	411(250)	33.48	32.63	2.633E-03	.1319	3.353E-03	.1679	3.297E-03	.1650	2.864E-03
S	2137(250)	33.48	32.63	2.633E-03	.1318	3.353E-03	.1679	3.243E-03	.1623	2.818E-03
I	412(250)	34.56	33.66	2.591E-03	.1297	3.299E-03	.1652	3.243E-03	.1623	2.818E-03
S	2138(250)	34.56	33.66	2.591E-03	.1297	3.299E-03	.1652	3.191E-03	.1597	2.772E-03
I	413(250)	35.64	34.74	2.550E-03	.1277	3.247E-03	.1626	3.191E-03	.1597	2.772E-03
S	2139(250)	35.64	34.74	2.550E-03	.1277	3.247E-03	.1626	3.141E-03	.1572	2.729E-03
I	414(250)	36.69	35.79	2.513E-03	.1258	3.199E-03	.1602	3.141E-03	.1572	2.729E-03
S	2140(250)	36.69	35.79	2.513E-03	.1258	3.199E-03	.1602	3.094E-03	.1549	2.688E-03
I	415(250)	37.76	36.87	2.474E-03	.1239	3.152E-03	.1578	3.094E-03	.1549	2.688E-03
S	2141(250)	37.76	36.87	2.474E-03	.1239	3.152E-03	.1578	3.049E-03	.1526	2.649E-03
		38.28		MODEL HAS LEFT CENTERLINE						
I	416(250)	38.84	37.96	2.440E-03	.1222	3.107E-03	.1556	3.049E-03	.1526	2.649E-03
S	2142(250)	38.84	37.96	2.440E-03	.1222	3.107E-03	.1556	3.005E-03	.1505	2.611E-03
I	417(250)	39.89	38.99	2.407E-03	.1205	3.065E-03	.1535	3.005E-03	.1505	2.611E-03
S	2143(250)	39.89	38.99	2.407E-03	.1205	3.065E-03	.1535	2.965E-03	.1486	2.576E-03

WHCUR	CONFIG	MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
1	11	TRIP					.110	0	7.289E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	324.0	1279	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE= .040 FT)	STREF (RE= .040 FT)
93.5	[illegible]	1.521	3772	3.276E-05	7.530E-08	1.541E 06	1.998E-02	2.170E-02

CAMERA (OF(T) SILE(S) 56)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACAR)	TRAN(TO)	ETA(TO)
	389					
	424	250	85	.0617	2.249E-01	2.4362E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	418(250)	40.57	40.07	2.375E-03	.1188	3.024E-03	.1514	2.924E-03	.1464	2.541E-03
S	2144(250)	40.57	40.07	2.375E-03	.1189	3.024E-03	.1514	2.924E-03	.1464	2.541E-03
I	419(250)	42.02	41.12	2.344E-03	.1173	2.985E-03	.1494	2.887E-03	.1445	2.508E-03
S	2145(250)	42.02	41.12	2.344E-03	.1173	2.985E-03	.1494	2.887E-03	.1445	2.508E-03
I	420(250)	43.09	42.20	2.316E-03	.1158	2.947E-03	.1475	2.850E-03	.1427	2.476E-03
S	2146(250)	43.09	42.20	2.316E-03	.1158	2.947E-03	.1475	2.850E-03	.1427	2.476E-03

389
GRP 2

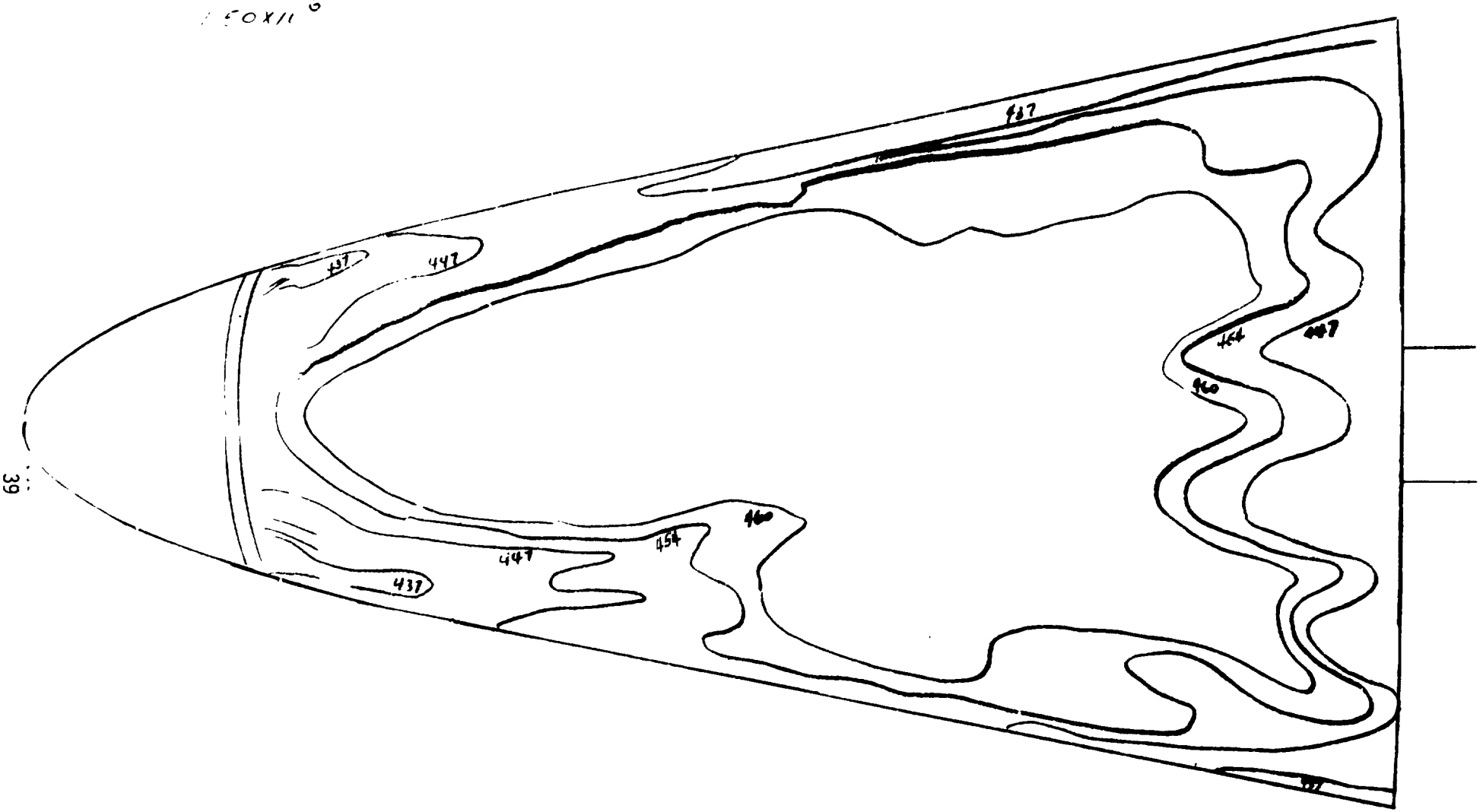
$\alpha = 30°$

426 1st PR ℄

320 PSIA
830 °F

$T_{PC} = 250°F$

150X11 6



NASA-HI DH 56

V41R-824

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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GROUP CONFIG *** MODEL DESCRIPTION ***

2 11 TWIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TWIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
			5	.110	.020	7.121E 05	2.509E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	319.7	1287	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
94.1	.036	1.591	3786	3.015E-05	7.577E-08	1.505E 06	1.988E-02	2.196E-02

CAPEHA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
(DF(T)	384					
SIDE(S)	.24	250	85	.0637	2.223E-01	2.4024E-01
SG						

	PIC NO	TIME	DELTINE	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	423(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
5	2149(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
IN-FCT TIME =		1.60								
1	424(250)	2.57	1.88	1.155E-02	.5764	1.455E-02	.7323	1.408E-02	.7086	1.245E-02
5	2150(250)	2.57	1.88	1.155E-02	.5764	1.455E-02	.7323	1.408E-02	.7086	1.245E-02
1	425(250)	3.62	2.73	9.978E-03	.4513	1.140E-02	.5741	1.103E-02	.5555	9.761E-03
5	2151(250)	3.62	2.73	9.978E-03	.4518	1.140E-02	.5741	1.103E-02	.5555	9.761E-03
5G		3.93								
1	426(250)	4.70	3.82	7.600E-03	.3824	9.657E-03	.4861	9.344E-03	.4704	8.265E-03
5	2152(250)	4.70	3.82	7.600E-03	.3824	9.657E-03	.4861	9.344E-03	.4704	8.265E-03
1	427(250)	5.78	4.88	6.710E-03	.3378	8.526E-03	.4292	8.244E-03	.4153	7.297E-03
5	2153(250)	5.78	4.88	6.710E-03	.3378	8.526E-03	.4292	8.244E-03	.4153	7.297E-03
1	428(250)	6.83	5.93	6.044E-03	.3064	7.733E-03	.3893	7.483E-03	.3767	6.619E-03
5	2154(250)	6.83	5.93	6.044E-03	.3064	7.733E-03	.3893	7.483E-03	.3767	6.619E-03
1	429(250)	7.90	7.01	5.600E-03	.2819	7.115E-03	.3582	6.886E-03	.3465	6.090E-03
5	2155(250)	7.90	7.01	5.600E-03	.2819	7.115E-03	.3582	6.886E-03	.3465	6.090E-03
1	430(250)	8.98	8.08	5.216E-03	.2626	6.626E-03	.3335	6.406E-03	.3226	5.670E-03
5	2156(250)	8.98	8.08	5.216E-03	.2624	6.626E-03	.3335	6.406E-03	.3226	5.670E-03
1	431(250)	10.03	9.13	4.904E-03	.2469	6.231E-03	.3137	6.027E-03	.3035	5.334E-03
5	2157(250)	10.03	9.13	4.904E-03	.2469	6.231E-03	.3137	6.027E-03	.3035	5.334E-03
1	432(250)	11.11	10.21	4.634E-03	.2335	5.894E-03	.2967	5.703E-03	.2871	5.045E-03
5	2158(250)	11.11	10.21	4.634E-03	.2335	5.894E-03	.2967	5.703E-03	.2871	5.045E-03
1	433(250)	12.16	11.26	4.417E-03	.2223	5.612E-03	.2825	5.430E-03	.2733	4.803E-03
5	2159(250)	12.16	11.26	4.417E-03	.2223	5.612E-03	.2825	5.430E-03	.2733	4.803E-03
1	434(250)	13.23	12.34	4.220E-03	.2124	5.362E-03	.2699	5.188E-03	.2612	4.589E-03
5	2160(250)	13.23	12.34	4.220E-03	.2124	5.362E-03	.2699	5.188E-03	.2612	4.589E-03

WALLF CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REX	RED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
2	11	TRIP				5	.110	.020	7.121E 05	2.509E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	319.7	1267	29.97	.0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF	SWREF
94.1	.036	1.501	3786	3.015E-05	7.579E-08	1.505E 06	(XR= .040 FT) 1.986E-02	(WR= .040 FT) 2.194E-02

CAMERA ID(I)	ROLL NO	PLATE TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE MOUNT (RHOCACAR)	TRAN(TO)	BETA(TO)
3(CF(S)	389 .24	250	85	.9617	2.223E-01	2.4024E-01

SG

	PIC NO	TIME	RELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	43(250)	14.31	13.61	4.076E-03	.2037	5.162E-03	.2584	4.475E-03	.2505	4.401E-03
5	216(250)	14.31	13.61	4.076E-03	.2037	5.162E-03	.2584	4.475E-03	.2505	4.401E-03
1	436(250)	15.36	14.67	3.875E-03	.1962	4.952E-03	.2493	4.791E-03	.2412	4.238E-03
5	216(250)	15.36	14.67	3.875E-03	.1962	4.952E-03	.2493	4.791E-03	.2412	4.238E-03
1	437(250)	16.44	15.56	3.700E-03	.1893	4.777E-03	.2405	4.522E-03	.2327	4.089E-03
5	216(250)	16.44	15.56	3.700E-03	.1893	4.777E-03	.2405	4.622E-03	.2327	4.089E-03
1	438(250)	17.51	16.62	3.635E-03	.1839	4.620E-03	.2326	4.470E-03	.2250	3.954E-03
5	216(250)	17.51	16.62	3.635E-03	.1839	4.620E-03	.2326	4.470E-03	.2250	3.954E-03
1	439(250)	18.57	17.67	3.526E-03	.1775	4.440E-03	.2255	4.335E-03	.2182	3.835E-03
5	216(250)	18.57	17.67	3.526E-03	.1775	4.440E-03	.2255	4.335E-03	.2182	3.835E-03
1	440(250)	19.64	18.75	3.426E-03	.1723	4.350E-03	.2190	4.204E-03	.2119	3.723E-03
5	216(250)	19.64	18.75	3.426E-03	.1723	4.350E-03	.2190	4.204E-03	.2119	3.723E-03
1	441(250)	20.69	19.8	3.331E-03	.1677	4.243E-03	.2131	4.096E-03	.2062	3.623E-03
5	216(250)	20.69	19.8	3.331E-03	.1677	4.243E-03	.2131	4.096E-03	.2062	3.623E-03
1	442(250)	21.77	20.87	3.244E-03	.1633	4.122E-03	.2075	3.984E-03	.2008	3.528E-03
5	216(250)	21.77	20.87	3.244E-03	.1633	4.122E-03	.2075	3.984E-03	.2008	3.528E-03
1	443(250)	22.85	21.95	3.164E-03	.1593	4.020E-03	.2024	3.890E-03	.1958	3.441E-03
5	216(250)	22.85	21.95	3.164E-03	.1593	4.020E-03	.2024	3.890E-03	.1958	3.441E-03
1	444(250)	23.90	23.01	3.081E-03	.1556	3.927E-03	.1977	3.800E-03	.1913	3.361E-03
5	217(250)	23.90	23.01	3.081E-03	.1556	3.927E-03	.1977	3.800E-03	.1913	3.361E-03
1	445(250)	24.97	24.08	3.021E-03	.1521	3.838E-03	.1932	3.714E-03	.1870	3.285E-03
5	217(250)	24.97	24.08	3.021E-03	.1521	3.838E-03	.1932	3.714E-03	.1870	3.285E-03
1	446(250)	26.02	25.13	2.978E-03	.1489	3.757E-03	.1891	3.635E-03	.1830	3.216E-03
5	217(250)	26.05	25.15	2.955E-03	.1484	3.755E-03	.1890	3.633E-03	.1829	3.214E-03
1	447(250)	27.10	26.21	2.840E-03	.1458	3.674E-03	.1842	3.560E-03	.1792	3.149E-03
5	217(250)	27.10	26.21	2.840E-03	.1458	3.674E-03	.1842	3.560E-03	.1792	3.149E-03

R414-H24

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REN	REN
2	11	TRIP				5	.110	.020	7.121E 05	2.509E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	119.7	1267	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .060 FT)	SREF (IN .060 FT)
94.1	.034	1.501	3786	3.115E-05	7.574E-08	1.505E 06	1.986E-02	2.196E-02

LAMBDA (DEG)	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAP)	TRAN(TO)	HETA(TO)
SIZE(S)	3R4					
SG	420	250	85	.0617	2.223E-01	2.6024E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	44(250)	24.18	27.29	2.8[illegible]E-03	.1429	3.606E-03	.1815	3.4[illegible]E-03	.1756	3.086E-03
5	217(250)	24.18	27.29	2.8[illegible]E-03	.1429	3.606E-03	.1815	3.4[illegible]E-03	.1756	3.086E-03
1	44(250)	24.23	27.33	2.7[illegible]E-03	.1402	3.538E-03	.1781	3.420E-03	.1723	3.028E-03
5	217(250)	24.23	27.33	2.7[illegible]E-03	.1402	3.538E-03	.1781	3.420E-03	.1723	3.028E-03
1	45(250)	31.30	34.41	2.7[illegible]E-03	.1376	3.473E-03	.1748	3.360E-03	.1692	2.973E-03
5	217(250)	31.30	34.41	2.7[illegible]E-03	.1376	3.473E-03	.1748	3.360E-03	.1692	2.973E-03
1	45(250)	31.36	34.44	2.6[illegible]E-03	.1352	3.412E-03	.1718	3.302E-03	.1662	2.921E-03
5	217(250)	31.38	34.44	2.6[illegible]E-03	.1351	3.411E-03	.1717	3.300E-03	.1661	2.920E-03
1	46(250)	32.43	35.54	2.6[illegible]E-03	.1329	3.356E-03	.1688	3.245E-03	.1634	2.871E-03
5	217(250)	32.43	35.54	2.6[illegible]E-03	.1329	3.356E-03	.1688	3.245E-03	.1634	2.871E-03
1	46(250)	33.51	36.61	2.5[illegible]E-03	.1307	3.298E-03	.1660	3.191E-03	.1606	2.823E-03
5	217(250)	33.51	36.61	2.5[illegible]E-03	.1307	3.298E-03	.1660	3.191E-03	.1606	2.823E-03
1	46(250)	34.56	37.64	2.5[illegible]E-03	.1284	3.246E-03	.1634	3.141E-03	.1581	2.778E-03
5	218(250)	34.56	37.64	2.5[illegible]E-03	.1284	3.246E-03	.1634	3.141E-03	.1581	2.778E-03
1	46(250)	35.64	38.74	2.5[illegible]E-03	.1260	3.195E-03	.1609	3.092E-03	.1556	2.735E-03
5	218(250)	35.64	38.74	2.5[illegible]E-03	.1260	3.195E-03	.1609	3.092E-03	.1556	2.735E-03
1	46(250)	36.71	39.82	2.4[illegible]E-03	.1247	3.147E-03	.1584	3.045E-03	.1533	2.694E-03
5	218(250)	36.71	39.82	2.4[illegible]E-03	.1247	3.147E-03	.1584	3.045E-03	.1533	2.694E-03
		37.06		MODEL HAS LEFT CENTERLINE						
1	47(250)	37.76	39.87	2.4[illegible]E-03	.1229	3.102E-03	.1561	3.001E-03	.1511	2.655E-03
5	218(250)	37.76	39.87	2.4[illegible]E-03	.1229	3.102E-03	.1561	3.001E-03	.1511	2.655E-03
1	47(250)	38.84	37.96	2.4[illegible]E-03	.1211	3.057E-03	.1539	2.956E-03	.1489	2.617E-03
5	218(250)	38.84	37.96	2.4[illegible]E-03	.1211	3.057E-03	.1539	2.956E-03	.1489	2.617E-03
1	47(250)	39.89	38.99	2.3[illegible]E-03	.1195	3.016E-03	.1518	2.918E-03	.1469	2.581E-03
5	218(250)	39.89	38.99	2.3[illegible]E-03	.1195	3.016E-03	.1518	2.918E-03	.1469	2.581E-03

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VAIH-R24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
2	11	TRIP				5	.110	.020	7.121E 05	2.509E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	414.7	1287	20.07	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIF)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HWEF (WE .060 FT)	SINEF (WE .060 FT)
94.1	.016	1.57	3786	3.015E-05	7.579E-08	1.505E 04	1.988E-02	2.194E-02

CAPELA (OR SILE(S) 36)	MODEL NO.	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMLACAK)	TRAW(TO)	HETA(TO)
	384 .26	250	85	.0917	2.223E-01	2.4024E-01

PIC NO	TIME OF LIME	H(TO)	H(TO)/HWEF	H(.910)	H(.910)/HWEF	H(.912(0)	H(.912(0)/HWEF	ST(TO)

389

GRD3 $\alpha = 30°$

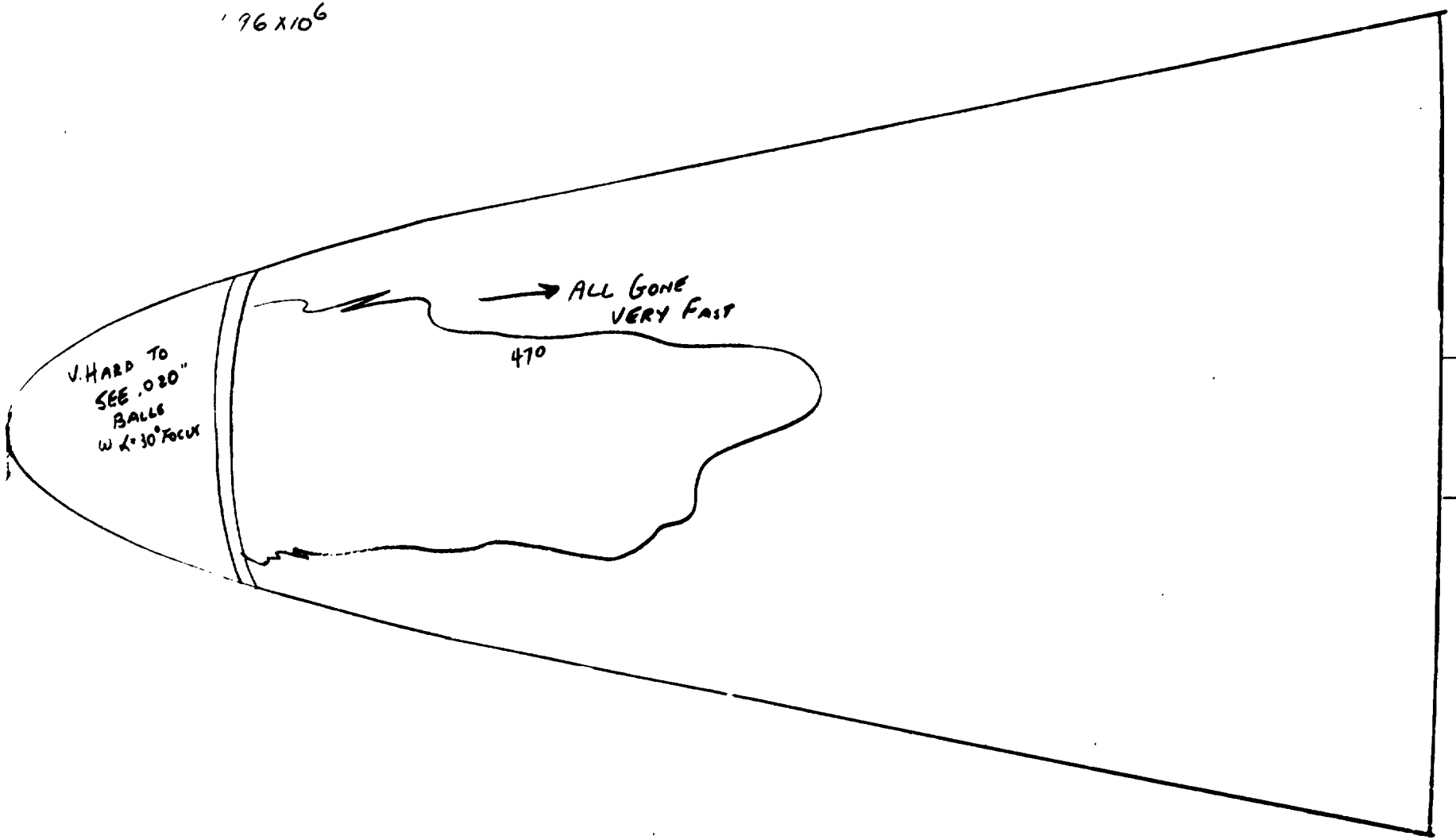
465 · 1st FR ℄

model starts out @ 474

THOUGHT AT 1st MODEL WAS CHANGING α
BUT IT APPEARS NOT TO BE

425 PSIA
840 °F
$.96 \times 10^6$

$T_{PC} = 250°F$



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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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941H-A28

GROUP CINFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REB	RED
1	11	1H1#	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
						5	.110	.020	9.260E 05	3.263E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	420.2	1250	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (RE .040 FT)	SREF (RE .040 FT)
93.5	.046	1.950	3790	3.387E-05	7.564E-08	1.55HE 06	2.266E-02	1.92HE-02

CAPPA	HOLL PO	PAIRT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	HETA(TO)
(DF(T)	389					
SILF(S)	424	250	86	.0617	2.224E-01	2.4030E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	462(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
5	2188(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.60							
1	463(250)	2.55	1.05	1.134E-02	.5093	1.405E-02	.6466	1.418E-02	.6257	9.668E-03
5	2189(250)	2.55	1.05	1.134E-02	.5093	1.405E-02	.6466	1.418E-02	.6257	9.668E-03
1	464(250)	3.62	2.13	8.978E-03	.3963	1.140E-02	.5331	1.103E-02	.4869	7.523E-03
5	2190(250)	3.62	2.13	8.978E-03	.3963	1.140E-02	.5331	1.103E-02	.4869	7.523E-03
SG			3.65							
1	465(250)	4.67	3.18	7.627E-03	.3367	9.663E-03	.4274	9.371E-03	.4136	6.391E-03
5	2191(250)	4.67	3.18	7.627E-03	.3367	9.663E-03	.4274	9.371E-03	.4136	6.391E-03
1	466(250)	5.75	4.26	6.729E-03	.2970	8.563E-03	.3771	8.267E-03	.3649	5.638E-03
5	2192(250)	5.75	4.26	6.729E-03	.2970	8.563E-03	.3771	8.267E-03	.3649	5.638E-03
1	467(250)	6.83	5.33	6.084E-03	.2687	7.729E-03	.3412	7.480E-03	.3301	5.101E-03
5	2193(250)	6.83	5.33	6.084E-03	.2687	7.729E-03	.3412	7.480E-03	.3301	5.101E-03
1	468(250)	7.88	6.38	5.611E-03	.2477	7.123E-03	.3144	6.896E-03	.3043	4.702E-03
5	2194(250)	7.88	6.38	5.611E-03	.2477	7.123E-03	.3144	6.896E-03	.3043	4.702E-03
1	469(250)	8.95	8.05	5.223E-03	.2305	6.631E-03	.2927	6.417E-03	.2832	4.376E-03
5	2195(250)	8.95	8.05	5.223E-03	.2305	6.631E-03	.2927	6.417E-03	.2832	4.376E-03
1	470(250)	10.03	9.13	4.906E-03	.2165	6.228E-03	.2749	6.027E-03	.2660	4.110E-03
5	2196(250)	10.03	9.13	4.906E-03	.2165	6.228E-03	.2749	6.027E-03	.2660	4.110E-03
1	471(250)	11.08	10.19	4.666E-03	.2051	5.894E-03	.2603	5.707E-03	.2519	3.893E-03
5	2197(250)	11.08	10.19	4.666E-03	.2051	5.894E-03	.2603	5.707E-03	.2519	3.893E-03
1	472(250)	12.16	11.24	4.418E-03	.1950	5.609E-03	.2476	5.428E-03	.2396	3.702E-03
5	2198(250)	12.16	11.24	4.418E-03	.1950	5.609E-03	.2476	5.428E-03	.2396	3.702E-03
		12.76		MODEL HAS LEFT CENTERLINE						
1	473(250)	13.21	12.31	4.225E-03	.1865	5.364E-03	.2368	5.191E-03	.2291	3.540E-03
5	2199(250)	13.21	12.31	4.225E-03	.1865	5.364E-03	.2368	5.191E-03	.2291	3.540E-03

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VON KARMAN GAS DYNAMICS FACILITY

V41H-B24 50 INCH HYPERSONIC TUNNEL A

GHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE x/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	x/L	DIA.	REX	RED
3	11	TRIP				S	.110	.020	9.260E 05	3.263E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	420.2	1250	29.97	.03	30.00	.0	.0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SREF (R= .040 FT)
93.5	.044	1.950	1740	3.907E-05	7.588E-08	1.558E 06	2.266E-02	1.928E-02

CAMERA (OF(T) SILE(S) 36)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (NPCACAN)	TRAN(TO)	BETA(TO)
	389					
	424	250	84	.0617	2.224E-01	2.4030E-01

	PIC NO	TIME	RELATIVE	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	474(250)	14.29	13.39	4.052E-03	.1788	5.144E-03	.2271	4.978E-03	.2197	3.395E-03
2	2200(250)	14.29	13.39	4.052E-03	.1788	5.144E-03	.2271	4.978E-03	.2197	3.395E-03
1	475(250)	15.36	14.47	3.848E-03	.1721	4.949E-03	.2194	4.789E-03	.2114	3.266E-03
2	2201(250)	15.36	14.47	3.848E-03	.1721	4.949E-03	.2194	4.789E-03	.2114	3.266E-03
1	476(250)	16.41	15.52	3.748E-03	.1681	4.778E-03	.2109	4.624E-03	.2041	3.154E-03
2	2202(250)	16.41	15.52	3.748E-03	.1681	4.778E-03	.2109	4.624E-03	.2041	3.154E-03
1	477(250)	17.49	16.59	3.605E-03	.1607	4.621E-03	.2040	4.472E-03	.1974	3.050E-03
2	2203(250)	17.49	16.59	3.605E-03	.1607	4.621E-03	.2040	4.472E-03	.1974	3.050E-03
1	478(250)	18.54	17.64	3.530E-03	.1558	4.481E-03	.1978	4.336E-03	.1914	2.958E-03
2	2204(250)	18.54	17.64	3.530E-03	.1558	4.481E-03	.1978	4.336E-03	.1914	2.958E-03
1	479(250)	19.62	18.73	3.427E-03	.1513	4.350E-03	.1920	4.210E-03	.1858	2.871E-03
2	2205(250)	19.62	18.73	3.427E-03	.1513	4.350E-03	.1920	4.210E-03	.1858	2.871E-03
1	480(250)	20.69	19.80	3.332E-03	.1471	4.230E-03	.1867	4.094E-03	.1807	2.792E-03
2	2206(250)	20.69	19.80	3.332E-03	.1471	4.230E-03	.1867	4.094E-03	.1807	2.792E-03
1	481(250)	21.74	20.85	3.247E-03	.1433	4.122E-03	.1820	3.984E-03	.1761	2.721E-03
2	2207(250)	21.74	20.85	3.247E-03	.1433	4.122E-03	.1820	3.984E-03	.1761	2.721E-03
1	482(250)	22.82	21.92	3.106E-03	.1398	4.020E-03	.1774	3.890E-03	.1717	2.653E-03
2	2208(250)	22.82	21.92	3.106E-03	.1398	4.020E-03	.1774	3.890E-03	.1717	2.653E-03
1	483(250)	23.87	22.98	3.043E-03	.1365	3.927E-03	.1733	3.800E-03	.1677	2.592E-03
2	2209(250)	23.87	22.98	3.043E-03	.1365	3.927E-03	.1733	3.800E-03	.1677	2.592E-03

389

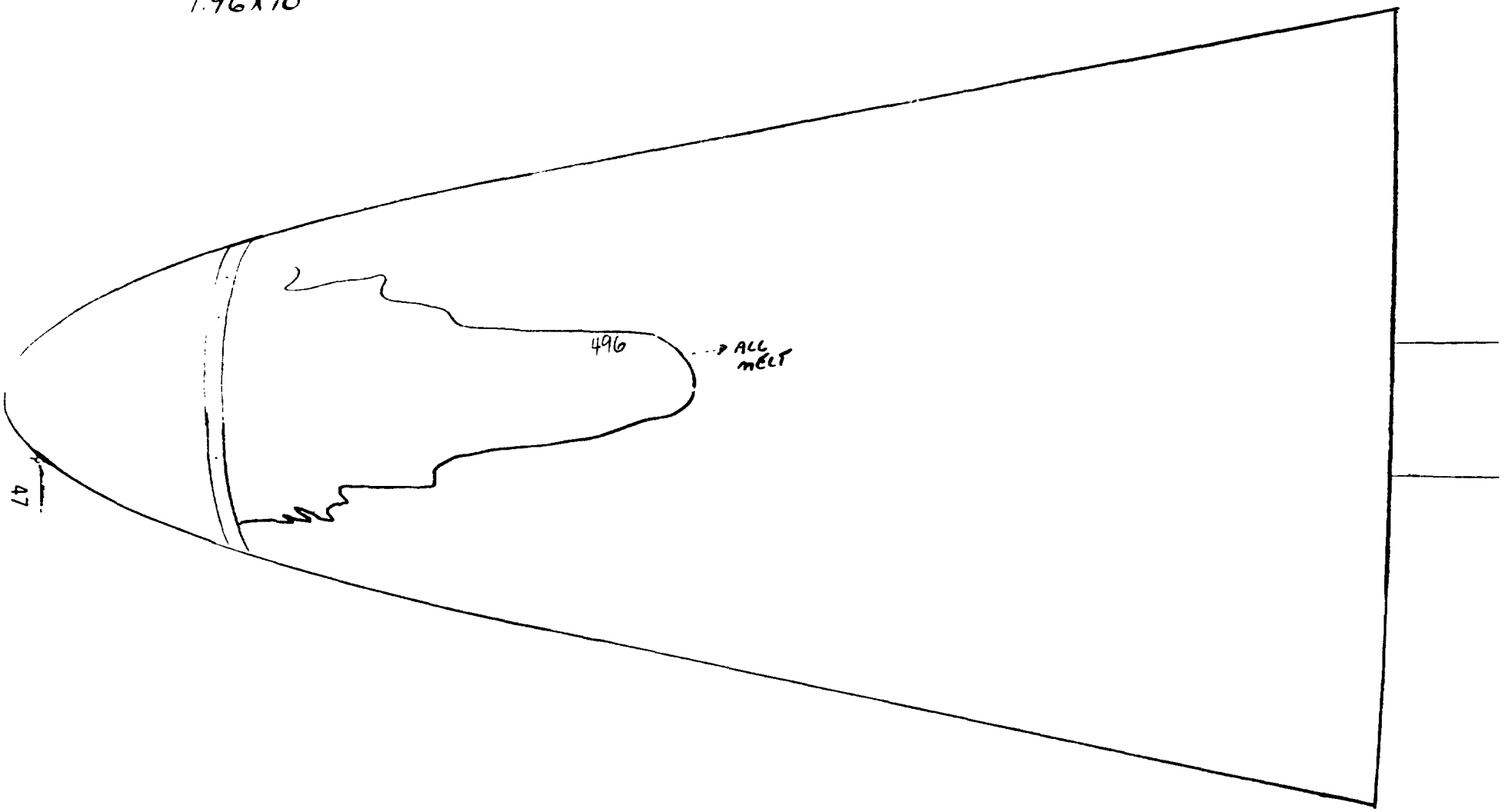
GRP 4 $\alpha' = 30°$

489 . ST FR ℄

425 PSIA $T_{PC} = 300°F$

840° F

1.96×10^6



WNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	MED
4	11	TRIP				S	.110	.020	9.285E 05	3.272E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	427.9	1304	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .060 FT)	SIREF (R= .060 FT)
96.5	.065	1.98	3809	3.938E-05	7.642E-08	1.563E 06	2.290E-02	1.922E-02

CAPPA	ROLL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
(OR(T)	309					
>ILF(S)	424	300	86	.0636	2.824E-01	3.2521E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	488(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	2212(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INFECT TIME =			1.65							
1	487(300)	2.55	1.65	1.610E-02	.7028	2.081E-02	.9085	2.008E-02	.8767	1.327E-02
>	2213(300)	2.55	1.65	1.610E-02	.7028	2.081E-02	.9085	2.008E-02	.8767	1.327E-02
1	488(300)	3.62	2.73	1.225E-02	.5464	1.619E-02	.7069	1.562E-02	.6821	1.032E-02
>	2214(300)	3.62	2.73	1.225E-02	.5464	1.619E-02	.7069	1.562E-02	.6821	1.032E-02
>G			3.87							
>	2215(300)	4.87	3.78	1.055E-02	.4666	1.375E-02	.6005	1.327E-02	.5795	8.771E-03
1	489(300)	4.70	3.85	1.091E-02	.4831	1.371E-02	.5966	1.323E-02	.5776	8.742E-03
1	490(300)	5.75	4.85	9.307E-03	.4099	1.213E-02	.5298	1.171E-02	.5113	7.738E-03
>	2216(300)	5.75	4.85	9.307E-03	.4099	1.213E-02	.5298	1.171E-02	.5113	7.738E-03
1	491(300)	6.83	5.93	8.443E-03	.3708	1.098E-02	.4793	1.054E-02	.4626	7.000E-03
>	2217(300)	6.83	5.93	8.443E-03	.3708	1.098E-02	.4793	1.054E-02	.4626	7.000E-03
1	492(300)	7.68	6.98	7.828E-03	.3418	1.012E-02	.4418	9.764E-03	.4263	6.452E-03
>	2218(300)	7.68	6.98	7.828E-03	.3418	1.012E-02	.4418	9.764E-03	.4263	6.452E-03
1	493(300)	8.65	8.08	7.265E-03	.3181	9.418E-03	.4112	9.089E-03	.3968	6.006E-03
>	2219(300)	8.65	8.08	7.265E-03	.3181	9.418E-03	.4112	9.089E-03	.3968	6.006E-03
>	2220(300)	10.61	9.11	6.653E-03	.2992	8.858E-03	.3868	8.548E-03	.3732	5.649E-03
1	494(300)	10.03	9.13	6.853E-03	.2998	8.846E-03	.3862	8.536E-03	.3727	5.641E-03
1	495(300)	11.68	10.19	6.481E-03	.2830	8.377E-03	.3658	8.084E-03	.3530	5.342E-03
>	2221(300)	11.68	10.13	6.481E-03	.2830	8.377E-03	.3658	8.084E-03	.3530	5.342E-03
		11.71		MODEL HAS LEFT CENTERLINE						
1	496(300)	12.16	11.24	5.163E-03	.2691	7.967E-03	.3478	7.688E-03	.3357	5.080E-03
>	2222(300)	12.16	11.24	5.163E-03	.2691	7.967E-03	.3478	7.688E-03	.3357	5.080E-03
1	497(300)	13.21	12.31	5.894E-03	.2576	7.619E-03	.3327	7.353E-03	.3210	4.859E-03
>	2223(300)	13.21	12.31	5.894E-03	.2576	7.619E-03	.3327	7.353E-03	.3210	4.859E-03

VKIH-528

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GRIDS	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
6	11	TRIP				5	.110	.020	9.285E 05	3.272E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	627.9	1304	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .069 FT)	SINEF (R= .060 FT)
94.5	.045	1.996	3804	3.93E-05	7.642E-08	1.563E 06	2.290E-02	1.922E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKR)	TRAR(TO)	HETA(TO)
10F(T)	389					
51LE(S)	420	300	86	.0634	2.624E-01	3.2521E-01
56						

	PIC NO	TIME	ELTIME	H(TC)	H(TC)/HREF	H(.9TC)	H(.9TC)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	498(492)	14.25	13.39	5.6E-2E-03	.2468	7.306E-03	.3190	.051E-03	.3079	4.659E-03
5	2224(400)	14.29	13.39	5.6-2E-03	.2468	7.306E-03	.3190	7.051E-03	.3079	4.659E-03
1	499(392)	15.24	14.44	5.4.3E-03	.2377	7.035E-03	.3072	6.784E-03	.2964	4.486E-03
5	2225(400)	15.34	14.44	5.4.3E-03	.2377	7.035E-03	.3072	6.784E-03	.2964	4.486E-03

389
GRP5

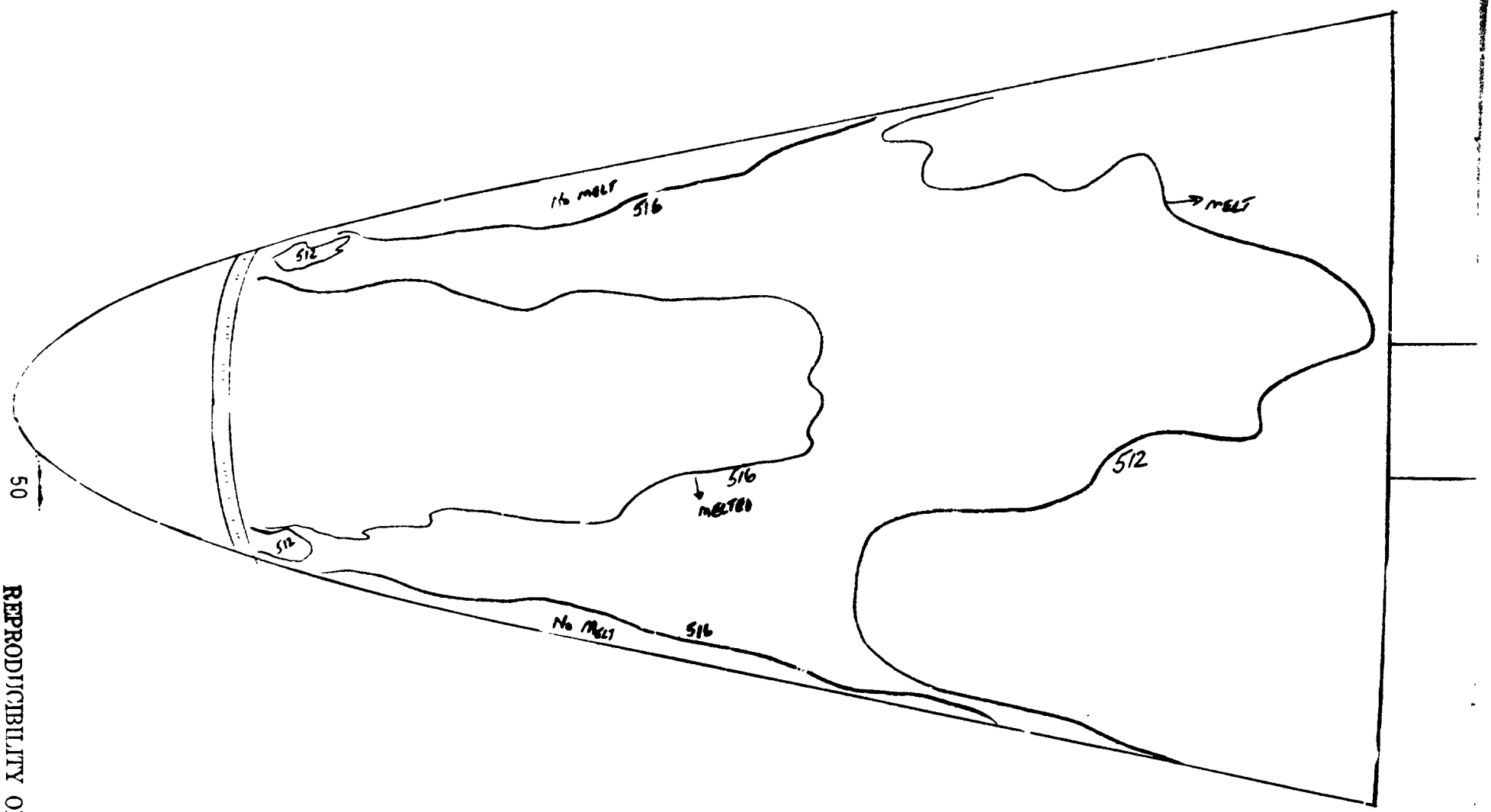
$\alpha = 30°$

305 1st FR ℄

425 PSIA
840°F

$T_R = 300°F$

1.98×10^6



NASA-MI OP 56

V41H-H2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REB	MED
S	11	TRIP				S	.110	.070	9.365E 05	3.300E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.5	1752	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH= .040 FT)	RINEF (RN= .040 FT)
94.F	.066	1.975	3792	3.463E-05	7.570E-01	1.580E 06	2.280E-02	1.916E-02

ALPHA (DEG)	ROLL NO.	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	META(TO)
10F(T)	3HV					
>ILE(S)	424	300	91	.0634	2.822E-01	3.269JE-01
>G						

PIC NO	TIME (ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(IDH
1 502(300)	1.50	MODEL HAS NOT REACHED CENTERLINE						
> 222E(300)	1.50	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 1.00								
1 503(300)	2.55 1.05	1.0[illegible]E-02	.7353	2.087E-02	.9154	2.013E-02	.8828	1.328E-02
> 222F(300)	2.55 1.05	1.0[illegible]E-02	.7353	2.087E-02	.9154	2.013E-02	.8828	1.328E-02
1 504(300)	3.02 2.73	1.231E-02	.5408	1.624E-02	.7122	1.566E-02	.6869	1.033E-02
> 2240(300)	3.02 2.73	1.231E-02	.5408	1.624E-02	.7122	1.566E-02	.6869	1.033E-02
>G 1.00								
1 505(300)	4.70 3.85	1.0[illegible]E-02	.4667	1.375E-02	.6031	1.326E-02	.5817	8.748E-03
> 2231(300)	4.70 3.85	1.0[illegible]E-02	.4667	1.375E-02	.6031	1.326E-02	.5817	8.748E-03
> 223(300)	5.75 4.85	9.319E-03	.4113	1.217E-02	.5338	1.176E-02	.5149	7.743E-03
1 506(300)	5.78 4.85	9.255E-03	.193	1.214E-02	.5325	1.171E-02	.5135	7.723E-03
1 507(300)	6.83 5.93	8.425E-03	.3727	1.101E-02	.4830	1.062E-02	.4658	7.005E-03
> 2233(300)	6.83 5.93	8.425E-03	.3727	1.101E-02	.4830	1.062E-02	.4658	7.005E-03
1 508(300)	7.60 7.01	7.807E-03	.3424	1.013E-02	.4463	9.771E-03	.4285	6.445E-03
> 2234(300)	7.60 7.01	7.807E-03	.3424	1.013E-02	.4463	9.771E-03	.4285	6.445E-03
1 509(300)	8.55 8.05	7.2[illegible]E-03	.3193	9.448E-03	.4143	9.112E-03	.3996	6.010E-03
> 2235(300)	8.55 8.05	7.2[illegible]E-03	.3193	9.448E-03	.4143	9.112E-03	.3996	6.010E-03
1 510(300)	10.03 9.13	6.537E-03	.2894	8.874E-03	.3892	8.558E-03	.3753	5.645E-03
> 2236(300)	10.03 9.13	6.537E-03	.2894	8.874E-03	.3892	8.558E-03	.3753	5.645E-03
1 511(300)	11.08 10.13	6.475E-03	.2869	8.403E-03	.3685	8.104E-03	.3554	5.346E-03
> 2237(300)	11.08 10.13	6.475E-03	.2869	8.403E-03	.3685	8.104E-03	.3554	5.346E-03
1 512(300)	12.16 11.24	6.152E-03	.2701	7.99[illegible]E-03	.3505	7.708E-03	.3380	5.084E-03
> 2238(300)	12.16 11.24	6.152E-03	.2701	7.99[illegible]E-03	.3505	7.708E-03	.3380	5.084E-03
1 513(300)	13.23 12.34	5.843E-03	.2560	7.635E-03	.3349	7.364E-03	.3230	4.857E-03
> 2239(300)	13.23 12.34	5.843E-03	.2560	7.635E-03	.3349	7.364E-03	.3230	4.857E-03

NASA-MI OH 54

V41R-R24

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

10- 8-74 PAGE 2

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	RED
5	11	TRIP				S	.110	.020	9.365E 05	3.300E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	625.5	1292	24.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	SINEF (IN .040 FT)
96.0	.066	1.979	3792	3.993E-05	7.577E-06	1.580E 06	2.280E-02	1.916E-02

CAPEGA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGAM)	TRAN(TO)	BETA(TO)
	389					
STEP(S)	424	300	91	.969A	2.822E-01	3.269E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	516(300)	16.29	13.39	5.6[illegible]E-03	.2477	7.329E-03	.3216	7.0[illegible]E-03	.3100	4.662E-03
2	2261(300)	16.29	13.39	5.6[illegible]E-03	.2477	7.329E-03	.3216	7.0[illegible]E-03	.3100	4.662E-03
1	515(300)	15.26	14.67	5.633E-03	.2483	7.351E-03	.3203	6.801E-03	.2983	4.486E-03
2	2261(300)	15.26	14.67	5.633E-03	.2483	7.051E-03	.3093	6.801E-03	.2983	4.486E-03
1	516(300)	16.66	15.56	5.2[illegible]E-03	.2299	6.803E-03	.2986	6.561E-03	.2877	4.328E-03
2	2262(300)	16.66	15.56	5.2[illegible]E-03	.2299	6.803E-03	.2986	6.561E-03	.2877	4.328E-03
1	517(300)	17.09	14.53	5.073E-03	.2225	6.5[illegible]E-03	.2847	6.350E-03	.2785	4.188E-03
2	2263(300)	17.09	14.53	5.073E-03	.2225	6.5[illegible]E-03	.2847	6.350E-03	.2785	4.188E-03
		18.04		MODEL HAS LEFT CENTERLINE						
1	518(300)	18.57	17.67	[illegible]E-03	.2156	6.3[illegible]E-03	.2784	6.153E-03	.2699	4.059E-03
2	2264(300)	18.57	17.67	[illegible]E-03	.2156	6.3[illegible]E-03	.2784	6.154E-03	.2699	4.059E-03
1	519(300)	19.62	18.72	4.7[illegible]E-03	.2095	6.1[illegible]E-03	.2718	5.97[illegible]E-03	.2622	3.943E-03
2	2265(300)	19.62	18.72	4.7[illegible]E-03	.2095	6.1[illegible]E-03	.2718	5.974E-03	.2622	3.943E-03
1	520(300)	20.69	19.81	4.6[illegible]E-03	.2037	6.02[illegible]E-03	.2646	5.813E-03	.2550	3.834E-03
2	2266(300)	20.69	19.81	4.6[illegible]E-03	.2037	6.02[illegible]E-03	.2646	5.813E-03	.2550	3.834E-03

389
[redacted]6

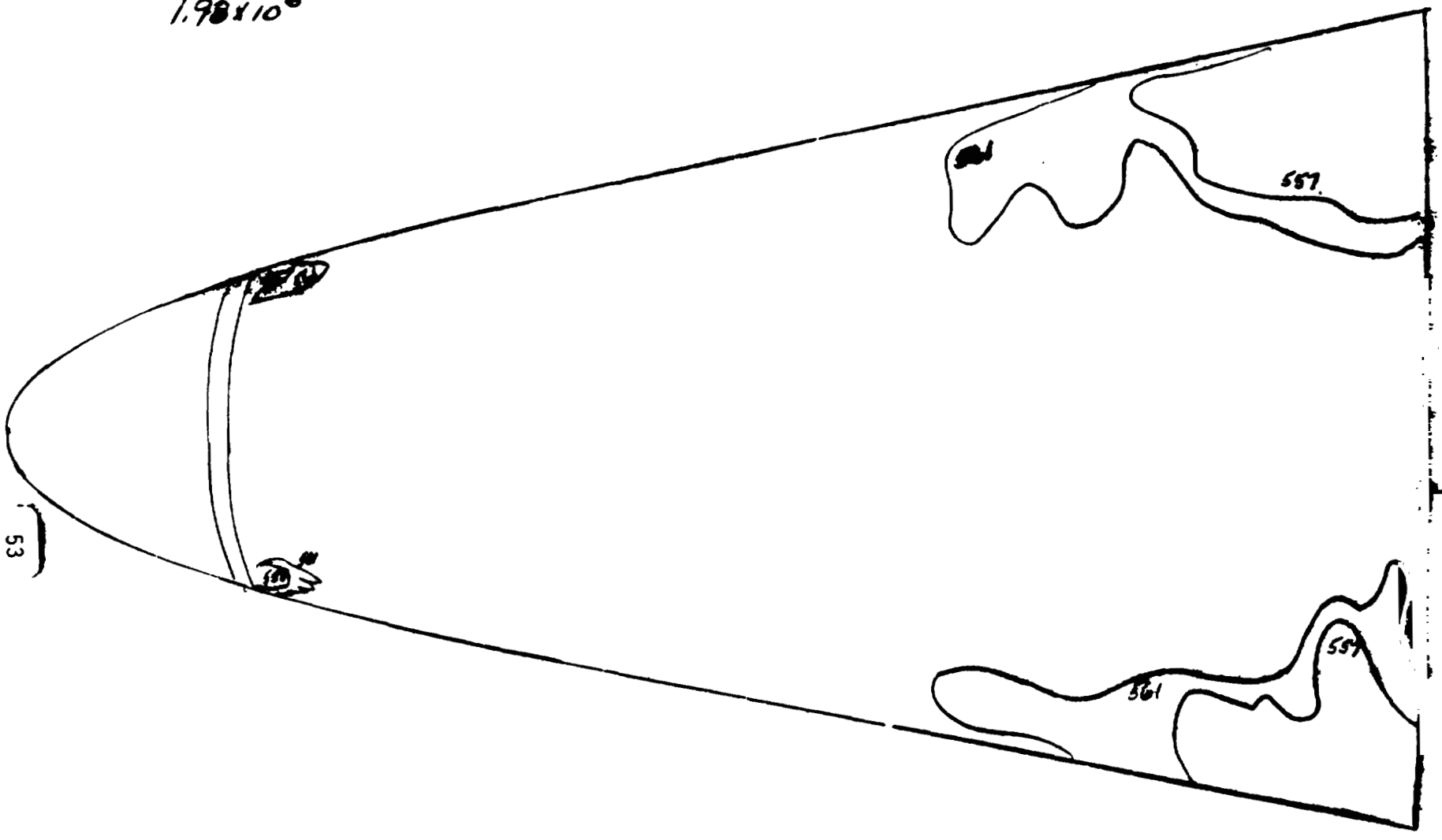
[redacted]
840°F

1.98×10^6

$\alpha = 30°$

$T_{PC} = 400°F$

526 1st Front



NASA-HI OP 54 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-74 PAGE 1

9414-R24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG *** MODEL DESCRIPTION ***

4 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REA	RED
			5	.110	.070	9.352E 05	3.295E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	423.1	1288	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .060 FT)	SIREF (W= .060 FT)
93.8	.044	1.966	3788	3.962E-04	7.564E-08	1.577E 06	2.273E-02	1.919E-02

OMEGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SURFACE ROUGH (MICROCARK)	TRAN(TO)	HETA(TO)
(DP(T))	329					
SILF(S)	424	400	90	.0000	4.201E-01	5.7355E-01
SG						

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 523(400)	1.52	MODEL HAS NOT REACHED CENTERLINE						
> 2264(400)	1.52	MODEL HAS NOT REACHED CENTERLINE						
INFCT TIME = 1.62								
1 524(400)	2.57 1.04	2.936E-02	1.2920	4.067E-02	1.7907	3.881E-02	1.7077	2.422E-02
> 2251(400)	2.57 1.04	2.936E-02	1.2920	4.067E-02	1.7907	3.881E-02	1.7077	2.422E-02
1 525(400)	3.65 2.74	2.208E-02	1.0000	3.109E-02	1.3943	3.024E-02	1.3305	1.887E-02
> 2251(400)	3.65 2.74	2.208E-02	1.0000	3.109E-02	1.3943	3.024E-02	1.3305	1.887E-02
SG 3.90								
1 526(400)	4.70 3.74	1.965E-02	.8557	2.694E-02	1.1863	2.570E-02	1.1310	1.404E-02
> 2252(400)	4.72 3.81	1.935E-02	.8524	2.665E-02	1.1916	2.542E-02	1.1273	1.399E-02
1 527(400)	5.78 4.87	1.718E-02	.7551	2.377E-02	1.0460	2.268E-02	.9981	1.415E-02
> 2253(400)	5.78 4.87	1.718E-02	.7551	2.377E-02	1.0460	2.268E-02	.9981	1.415E-02
1 528(400)	6.85 5.96	1.533E-02	.6733	2.151E-02	.9466	2.053E-02	.9032	1.281E-02
> 2254(400)	6.85 5.96	1.533E-02	.6733	2.151E-02	.9466	2.053E-02	.9032	1.281E-02
1 529(400)	7.90 6.99	1.421E-02	.6244	1.993E-02	.8775	1.892E-02	.8326	1.181E-02
> 2255(400)	7.90 6.99	1.421E-02	.6244	1.993E-02	.8775	1.892E-02	.8326	1.181E-02
1 530(400)	8.98 8.07	1.333E-02	.5866	1.866E-02	.8213	1.761E-02	.7750	1.099E-02
> 2256(400)	8.98 8.07	1.333E-02	.5866	1.866E-02	.8213	1.761E-02	.7750	1.099E-02
1 531(400)	10.06 9.15	1.252E-02	.5508	1.734E-02	.7630	1.656E-02	.7280	1.032E-02
> 2257(400)	10.06 9.15	1.252E-02	.5508	1.734E-02	.7630	1.656E-02	.7280	1.032E-02
1 532(400)	11.11 10.22	1.185E-02	.5216	1.642E-02	.7226	1.567E-02	.6895	9.777E-03
> 2258(400)	11.11 10.22	1.185E-02	.5216	1.642E-02	.7226	1.567E-02	.6895	9.777E-03
1 533(400)	12.18 11.27	1.127E-02	.4961	1.562E-02	.6872	1.490E-02	.6557	9.299E-03
> 2259(400)	12.18 11.27	1.127E-02	.4961	1.562E-02	.6872	1.490E-02	.6557	9.299E-03
1 534(400)	13.23 12.32	1.074E-02	.4725	1.494E-02	.6573	1.425E-02	.6271	8.893E-03
> 2260(400)	13.23 12.32	1.074E-02	.4725	1.494E-02	.6573	1.425E-02	.6271	8.893E-03

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V41H-828 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	NED
6	11	TRIP				S	.110	.020	9.352E 05	3.295E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	423.1	1288	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	DTREF (RE .040 FT)
93.8	.066	1.986	3786	3.442E-05	7.594E-08	1.577E 06	2.273E-02	1.919E-02

CAMERA (OR(T) SICE(S) 56	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
	389					
	424	400	80	.0040	4.201E-01	5.7355E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.8TO)	H(.8TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	535(400)	14.31	13.60	1.044E-02	.4550	1.432E-02	.6303	1.367E-02	.6014	8.529E-03
>	2261(400)	14.31	13.60	1.044E-02	.4550	1.432E-02	.6303	1.367E-02	.6014	8.529E-03
1	536(400)	15.39	14.68	9.944E-03	.4378	1.374E-02	.6044	1.315E-02	.5786	8.206E-03
>	2262(400)	15.39	14.68	9.944E-03	.4378	1.374E-02	.6044	1.315E-02	.5786	8.206E-03
1	537(400)	16.44	15.53	9.060E-03	.4227	1.331E-02	.5855	1.270E-02	.5587	7.923E-03
>	2263(400)	16.44	15.53	9.060E-03	.4227	1.331E-02	.5855	1.270E-02	.5587	7.923E-03
1	538(400)	17.51	16.60	9.269E-03	.4084	1.287E-02	.5662	1.228E-02	.5403	7.662E-03
>	2264(400)	17.51	16.60	9.269E-03	.4084	1.287E-02	.5662	1.228E-02	.5403	7.662E-03
1	539(400)	18.59	17.68	9.063E-03	.3961	1.247E-02	.5487	1.190E-02	.5236	7.425E-03
>	2265(400)	18.59	17.68	9.063E-03	.3961	1.247E-02	.5487	1.190E-02	.5236	7.425E-03
1	540(400)	19.66	18.73	8.768E-03	.3843	1.212E-02	.5331	1.156E-02	.5087	7.214E-03
>	2266(400)	19.66	18.73	8.768E-03	.3843	1.212E-02	.5331	1.156E-02	.5087	7.214E-03
1	541(400)	20.72	19.81	8.565E-03	.3763	1.178E-02	.5184	1.124E-02	.4947	7.015E-03
>	2267(400)	20.72	19.81	8.565E-03	.3763	1.178E-02	.5184	1.124E-02	.4947	7.015E-03
1	542(400)	21.77	20.86	8.288E-03	.3667	1.148E-02	.5052	1.096E-02	.4821	6.836E-03
>	2268(400)	21.77	20.86	8.288E-03	.3667	1.148E-02	.5052	1.096E-02	.4821	6.836E-03
1	543(400)	22.85	21.94	8.062E-03	.3557	1.120E-02	.4927	1.068E-02	.4701	6.666E-03
>	2269(400)	22.85	21.94	8.062E-03	.3557	1.120E-02	.4927	1.068E-02	.4701	6.666E-03
1	544(400)	23.92	23.01	7.681E-03	.3472	1.093E-02	.4810	1.043E-02	.4590	6.508E-03
>	227[illegible](400)	23.92	23.01	7.681E-03	.3472	1.093E-02	.4810	1.043E-02	.4590	6.508E-03
1	545(400)	24.97	24.06	7.717E-03	.3396	1.069E-02	.4706	1.020E-02	.4488	6.365E-03
>	2271(400)	24.97	24.06	7.717E-03	.3396	1.069E-02	.4706	1.020E-02	.4488	6.365E-03
	546(400)	26.05	25.14	7.550E-03	.3322	1.046E-02	.4602	9.9[illegible]E-03	.4391	6.227E-03
	2272(400)	26.05	25.14	7.550E-03	.3322	1.046E-02	.4602	9.974E-03	.4391	6.227E-03
	547(400)	27.10	26.19	7.375E-03	.3255	1.025E-02	.4509	9.777E-03	.4302	6.101E-03
>	2273(400)	27.10	26.19	7.375E-03	.3255	1.025E-02	.4509	9.777E-03	.4302	6.101E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
A	11	TRIP				5	.110	.020	9.352E 05	3.295E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	423.1	1288	29.97	.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	STREF (RE .040 FT)
93.8	.046	1.946	3786	3.462E-05	7.564E-08	1.577E 06	2.273E-02	1.419E-02

CAMERA (OF(T) STCF(S) 36	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAP)	TRAN(TO)	BETA(TO)
	389					
	426	400	90	.0660	4.201E-01	5.7355E-0

	PIC NO	TIME	(RELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.912(U)	H(.912(U)/HREF	ST(TO)
I	550(400)	26.18	27.27	7.2[illegible]E-03	.3140	1.004E-02	.4419	9.582E-03	.4216	5.979E-03
>	227(400)	26.18	27.27	7.2[illegible]E-03	.3140	1.004E-02	.4419	9.582E-03	.4216	5.979E-03
I	554(400)	26.25	27.34	7.110E-03	.3129	9.849E-03	.4334	9.394E-03	.4136	5.865E-03
>	227B(400)	26.25	27.34	7.110E-03	.3129	9.849E-03	.4334	9.394E-03	.4136	5.865E-03
I	552(400)	30.30	29.39	6.9[illegible]E-03	.3072	9.672E-03	.4256	9.224E-03	.4061	5.759E-03
>	227A(400)	30.30	29.39	6.9[illegible]E-03	.3072	9.672E-03	.4256	9.224E-03	.4061	5.759E-03
I	551(400)	31.38	30.47	6.8[illegible]E-03	.3018	9.499E-03	.4180	9.064E-03	.3989	5.656E-03
>	227(400)	31.38	30.47	6.8[illegible]E-03	.3018	9.499E-03	.4180	9.064E-03	.3989	5.656E-03
I	552(400)	32.43	31.52	6.7[illegible]E-03	.2967	9.339E-03	.4110	8.912E-03	.3921	5.561E-03
>	227H(400)	32.46	31.55	6.7[illegible]E-03	.2966	9.336E-03	.4108	8.908E-03	.3920	5.559E-03
I	553(400)	33.51	32.60	6.630E-03	.2917	9.186E-03	.4041	8.763E-03	.3856	5.468E-03
>	227G(400)	33.51	32.60	6.630E-03	.2917	9.186E-03	.4041	8.763E-03	.3856	5.468E-03
I	554(400)	34.58	33.67	6.523E-03	.2870	9.036E-03	.3976	8.622E-03	.3794	5.380E-03
>	227D(400)	34.58	33.67	6.523E-03	.2870	9.036E-03	.3976	8.622E-03	.3794	5.380E-03
I	555(400)	35.64	34.73	6.424E-03	.2827	8.898E-03	.3916	8.491E-03	.3736	5.298E-03
>	227E(400)	35.64	34.73	6.424E-03	.2827	8.898E-03	.3916	8.491E-03	.3736	5.298E-03
I	556(400)	36.71	35.80	6.327E-03	.2784	8.763E-03	.3856	8.362E-03	.3680	5.218E-03
>	227C(400)	36.71	35.80	6.327E-03	.2784	8.763E-03	.3856	8.362E-03	.3680	5.218E-03
I	557(400)	37.79	36.88	6.234E-03	.2743	8.635E-03	.3800	8.239E-03	.3626	5.141E-03
>	227B(400)	37.79	36.88	6.234E-03	.2743	8.635E-03	.3800	8.239E-03	.3626	5.141E-03
I	558(400)	38.84	37.93	6.147E-03	.2705	8.514E-03	.3747	8.124E-03	.3575	5.070E-03
>	227A(400)	38.84	37.93	6.147E-03	.2705	8.514E-03	.3747	8.124E-03	.3575	5.070E-03
I	559(400)	39.92	39.01	6.061E-03	.2667	8.396E-03	.3694	8.011E-03	.3525	4.999E-03
>	227H(400)	39.92	39.01	6.061E-03	.2667	8.396E-03	.3694	8.011E-03	.3525	4.999E-03
I	560(400)	40.97	41.06	5.981E-03	.2632	8.285E-03	.3646	7.905E-03	.3479	4.933E-03
>	227G(400)	40.97	41.06	5.981E-03	.2632	8.285E-03	.3646	7.905E-03	.3479	4.933E-03

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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REA	REO
			A/L	WIDTH	DEPTH	TYPE	A/L	DIA.		
4	11	TRIP				S	.110	.070	9.352E 05	3.295E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	423.1	1289	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	STREF (RE .060 FT)
93.8	.044	1.944	3786	3.442E-05	7.508E-08	1.577E 06	2.273E-02	1.919E-02

ALPHA (DEG)	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAOR)	TRAN(TO)	BETA(TO)
30	389					
30	426	400	90	.0668	4.201E-01	5.7355E-01

PIC NO	TIME (SEC)	ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
			MODEL HAS LEFT CENTERLINE						
1 461(400)	42.14	41.13	5.962E-03	.2597	8.176E-03	.3560	7.801E-03	.3433	4.086E-03
2 2287(400)	42.14	41.13	5.962E-03	.2597	8.176E-03	.3560	7.801E-03	.3433	4.086E-03
1 562(400)	44.12	42.21	5.862E-03	.2564	8.071E-03	.3542	7.701E-03	.3389	4.086E-03
2 2288(400)	44.12	42.21	5.862E-03	.2564	8.071E-03	.3542	7.701E-03	.3389	4.086E-03
1 563(400)	44.17	43.24	5.755E-03	.2533	7.972E-03	.3508	7.607E-03	.3347	4.747E-03
2 2289(400)	44.17	43.24	5.755E-03	.2533	7.972E-03	.3508	7.607E-03	.3347	4.747E-03
1 564(400)	45.25	44.34	5.685E-03	.2502	7.875E-03	.3465	7.514E-03	.3307	4.689E-03
2 2290(400)	45.25	44.34	5.685E-03	.2502	7.875E-03	.3465	7.514E-03	.3307	4.689E-03

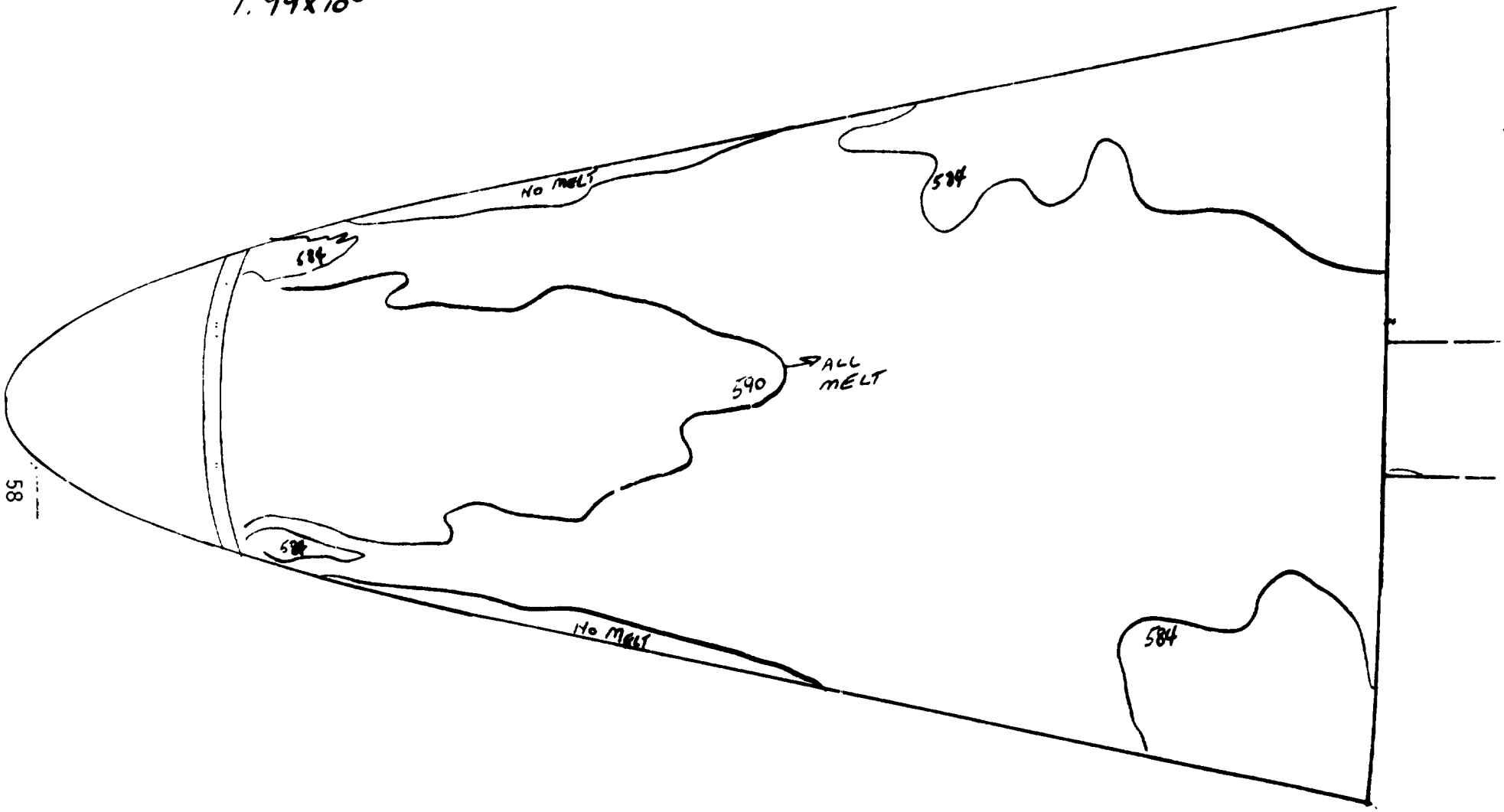
389
GRP 7

$\alpha = 30°$

$\overline{T}_{pc} = 350°F$

570 1ST FR ℄

425 PSIA
840°F
1.99×10^6



VKIH-A28

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REU
7	11	TRIP				S	.110	.020	9.406E 05	3.314E 03

MACH NO	P0(PSIA)	T0(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	427.4	1292	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .040 FT)	STREF (R= .040 FT)
96.5	.044	1.994	1292	3.270E-05	7.570E-06	1.598E 06	2.285E-02	1.912E-02

LAPERA (DF(T))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACR)	TRAN(TO)	BETA(TO)
	389					
SILE(S)	424	350	92	.0652	3.489E-01	4.340SE-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
	567(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	229(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.57							
	568(350)	2.55	1.07	2.193E-02	.5597	2.925E-02	1.2801	2.809E-02	1.2292	1.798E-02
>	229(350)	2.55	1.07	2.193E-02	.9597	2.925E-02	1.2801	2.809E-02	1.2292	1.798E-02
	569(350)	3.62	2.74	1.734E-02	.7479	2.280E-02	.9977	2.189E-02	.9580	1.401E-02
>	229(350)	3.62	2.74	1.734E-02	.7479	2.280E-02	.9977	2.189E-02	.9580	1.401E-02
36			5.87							
	570(350)	4.75	3.87	1.434E-02	.6338	1.932E-02	.8455	1.855E-02	.8118	1.187E-02
>	229(350)	4.75	3.87	1.434E-02	.6338	1.932E-02	.8455	1.855E-02	.8118	1.187E-02
	571(350)	5.75	4.87	1.283E-02	.5612	1.711E-02	.7486	1.643E-02	.7188	1.051E-02
>	229(350)	5.75	4.87	1.283E-02	.5612	1.711E-02	.7486	1.643E-02	.7188	1.051E-02
	572(350)	6.83	5.95	1.181E-02	.5079	1.548E-02	.6775	1.487E-02	.6505	9.514E-03
>	229(350)	6.83	5.95	1.181E-02	.5079	1.548E-02	.6775	1.487E-02	.6505	9.514E-03
	573(350)	7.88	7.00	1.070E-02	.4682	1.427E-02	.6245	1.370E-02	.5997	8.770E-03
>	229(350)	7.88	7.00	1.070E-02	.4682	1.427E-02	.6245	1.370E-02	.5997	8.770E-03
	574(350)	8.95	8.07	9.980E-03	.4359	1.329E-02	.5814	1.276E-02	.5583	8.165E-03
>	230(350)	8.95	8.07	9.980E-03	.4359	1.329E-02	.5814	1.276E-02	.5583	8.165E-03
	575(350)	10.03	9.15	9.355E-03	.4096	1.246E-02	.5461	1.196E-02	.5244	7.669E-03
>	230(350)	10.03	9.15	9.355E-03	.4096	1.246E-02	.5461	1.196E-02	.5244	7.669E-03
	576(350)	11.08	10.20	8.816E-03	.3878	1.182E-02	.5172	1.135E-02	.4966	7.263E-03
>	230(350)	11.08	10.20	8.816E-03	.3878	1.182E-02	.5172	1.135E-02	.4966	7.263E-03
	577(350)	12.16	11.28	8.428E-03	.3688	1.124E-02	.4919	1.079E-02	.4723	6.908E-03
>	230(350)	12.16	11.28	8.428E-03	.3688	1.124E-02	.4919	1.079E-02	.4723	6.908E-03
	578(350)	13.23	12.35	8.032E-03	.3524	1.074E-02	.4700	1.031E-02	.4513	6.600E-03
>	230(350)	13.23	12.35	8.032E-03	.3524	1.074E-02	.4700	1.031E-02	.4513	6.600E-03

GROUP CONFIG *** MODEL DESCRIPTION ***

GROUP	CONFIG	MODEL DESCRIPTION	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
7	11	TRIP				S	.110	.028	9.406E 05	3.314E 03

FAC-NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
1.48	427.4	1292	24.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	AREF (RE .060 FT)	SIREF (RE .060 FT)
94.0	.044	1.994	3792	3.470E-05	7.570E-08	1.589E 06	2.285E-02	1.912E-02

CAMERA (DEG T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCRCRK)	TRA(ITO)	HETA(ITO)
SILF(S)	3PM					
36	474	350	82	.0652	3.489E-01	4.340E-01

	PIC NO	TIME	DELTIME	H(ITO)	H(ITO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(ITO)
1	47x(350)	14.29	13.62	7.706E-03	.3383	1.041E-02	.4512	9.900E-03	.4332	6.336E-03
2	2305(350)	14.29	13.62	7.706E-03	.3383	1.041E-02	.4512	9.900E-03	.4332	6.336E-03
1	580(350)	15.36	14.64	7.447E-03	.3254	9.920E-03	.4341	9.525E-03	.4168	6.096E-03
2	2306(350)	15.36	14.64	7.447E-03	.3254	9.920E-03	.4341	9.525E-03	.4168	6.096E-03
1	581(350)	16.61	15.53	7.141E-03	.3142	9.579E-03	.4192	9.197E-03	.4025	5.886E-03
2	2307(350)	16.61	15.53	7.141E-03	.3142	9.579E-03	.4192	9.197E-03	.4025	5.886E-03
1	582(350)	17.89	16.61	6.944E-03	.3039	9.261E-03	.4054	8.896E-03	.3892	5.692E-03
2	2308(350)	17.89	16.61	6.944E-03	.3039	9.261E-03	.4054	8.896E-03	.3892	5.692E-03
1	583(350)	19.27	17.64	6.742E-03	.2945	8.977E-03	.3928	8.619E-03	.3772	5.516E-03
2	2309(350)	19.57	17.68	6.730E-03	.2945	8.977E-03	.3928	8.619E-03	.3772	5.516E-03
1	584(350)	20.62	18.73	6.538E-03	.2861	8.721E-03	.3816	8.376E-03	.3664	5.359E-03
2	2310(350)	20.62	18.73	6.538E-03	.2861	8.721E-03	.3816	8.376E-03	.3664	5.359E-03
1	585(350)	20.89	19.81	6.358E-03	.2782	8.481E-03	.3711	8.143E-03	.3564	5.212E-03
2	2311(350)	20.89	19.81	6.358E-03	.2782	8.481E-03	.3711	8.143E-03	.3564	5.212E-03
1	586(350)	21.17	20.85	6.142E-03	.2710	8.208E-03	.3615	7.931E-03	.3471	5.076E-03
2	2312(350)	21.17	20.85	6.142E-03	.2710	8.208E-03	.3615	7.931E-03	.3471	5.076E-03
1	587(350)	22.62	21.94	6.042E-03	.2666	8.060E-03	.3527	7.734E-03	.3386	4.953E-03
2	2313(350)	22.62	21.94	6.042E-03	.2666	8.060E-03	.3527	7.734E-03	.3386	4.953E-03
1	588(350)	23.60	23.01	5.849E-03	.2581	7.869E-03	.3443	7.555E-03	.3306	4.835E-03
2	2314(350)	23.60	23.01	5.849E-03	.2581	7.869E-03	.3443	7.555E-03	.3306	4.835E-03
		24.02		MODEL HAS LEFT CENTERLINE						
1	589(350)	24.65	24.07	5.769E-03	.2524	7.695E-03	.3367	7.389E-03	.3233	4.729E-03
2	2315(350)	24.65	24.07	5.769E-03	.2524	7.695E-03	.3367	7.389E-03	.3233	4.729E-03
1	590(350)	25.62	25.14	5.644E-03	.2470	7.529E-03	.3294	7.229E-03	.3163	4.626E-03
2	2316(350)	25.62	25.14	5.644E-03	.2470	7.529E-03	.3294	7.229E-03	.3163	4.626E-03

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

V41H-R24

WRCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
7	11	TRIP				S	.110	.020	9.406E 05	3.314E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	427.6	1292	24.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HWFF (HR .040 FT)	STREF (HR .040 FT)
94.0	.044	1.984	3792	3.270E-05	7.57JE-08	1.598E 06	2.285E-02	1.912E-02

CAMERA (OF(T) SILE(S) DG	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TR/((TO)	BETA(TO)
	289					
	424	350	92	.0052	3.484E-01	4.3405E-01

PIC NO	TIME LELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)

389

GRP 8

555 PSIA

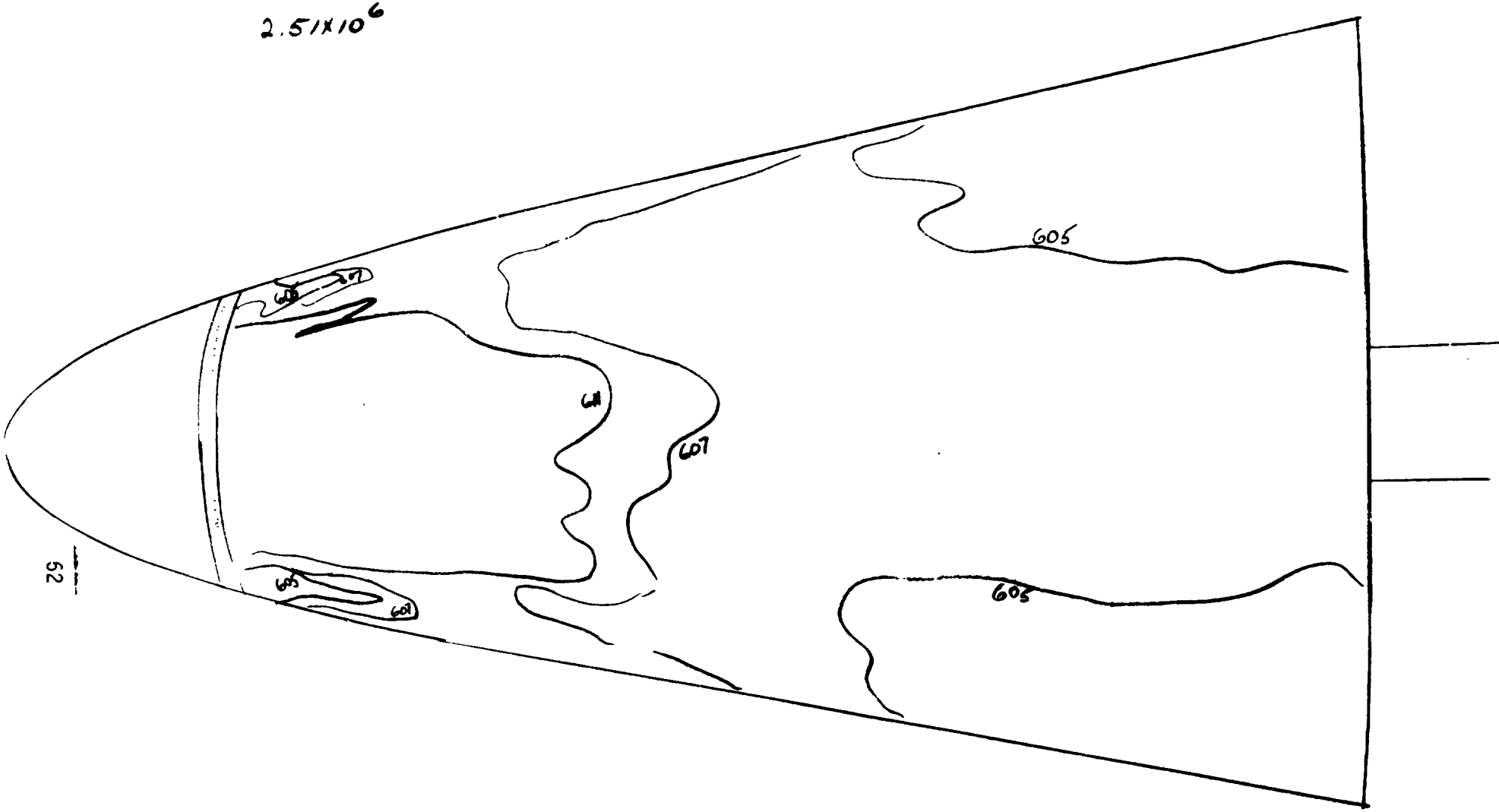
860°F

2.51×10^6

$\alpha = 30°$

$T_{PC} = 350°F$

596 1st Fr ℄



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REU
H	11	TRIP				S	.110	.020	1.189E 06	4.189E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREMENU	ROLL-MODEL	TAW
7.99	555.4	1313	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	ML-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
95.2	.257	2.583	3623	5.047E-05	7.670E-08	2.514E 06	2.605E-02	1.699E-02

ALPHA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HHCACAR)	TRAR(TO)	HETA(TO)
	284					
STLF(S)	424	450	91	.0652	3.400E-01	4.1854E-01

PIC NO	TIME	TELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 593(450)	1.50		MODEL HAS NOT REACHED CENTERLINE						
2 2319(450)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65							
1 594(450)	2.55	1.65	2.124E-02	.8153	2.810E-02	1.0786	2.701E-02	1.0371	1.357E-02
2 2320(450)	2.55	1.65	2.124E-02	.8153	2.810E-02	1.0786	2.701E-02	1.0371	1.357E-02
1 595(450)	3.62	2.73	1.652E-02	.6343	2.184E-02	.8392	2.102E-02	.8069	1.056E-02
2 2321(450)	3.62	2.73	1.652E-02	.6343	2.184E-02	.8392	2.102E-02	.8069	1.056E-02
6		3.90							
1 596(450)	4.70	3.81	1.349E-02	.5371	1.851E-02	.7107	1.780E-02	.6833	8.939E-03
2 2322(450)	4.70	3.81	1.349E-02	.5371	1.851E-02	.7107	1.780E-02	.6833	8.939E-03
1 597(450)	5.75	4.86	1.244E-02	.4756	1.639E-02	.6290	1.575E-02	.6048	7.912E-03
2 2323(450)	5.75	4.86	1.244E-02	.4756	1.639E-02	.6293	1.575E-02	.6048	7.912E-03
1 598(450)	6.83	5.93	1.121E-02	.4301	1.483E-02	.5691	1.425E-02	.5472	7.159E-03
2 2324(450)	6.83	5.93	1.121E-02	.4301	1.483E-02	.5691	1.425E-02	.5472	7.159E-03
1 599(450)	7.88	6.98	1.033E-02	.3964	1.366E-02	.5245	1.314E-02	.5043	6.598E-03
2 2325(450)	7.88	6.98	1.033E-02	.3964	1.366E-02	.5245	1.314E-02	.5043	6.598E-03
1 600(450)	8.95	8.04	9.613E-03	.3690	1.272E-02	.4882	1.223E-02	.4694	6.141E-03
2 2326(450)	8.95	8.04	9.613E-03	.3690	1.272E-02	.4882	1.223E-02	.4694	6.141E-03
1 601(450)	10.03	9.13	9.026E-03	.3464	1.195E-02	.4586	1.149E-02	.4409	5.768E-03
2 2327(450)	10.03	9.13	9.026E-03	.3466	1.195E-02	.4586	1.149E-02	.4409	5.768E-03
1 602(450)	11.08	10.19	8.520E-03	.3282	1.131E-02	.4343	1.088E-02	.4175	5.463E-03
2 2328(450)	11.08	10.19	8.520E-03	.3282	1.131E-02	.4343	1.088E-02	.4175	5.463E-03
1 603(450)	12.16	11.24	8.132E-03	.3122	1.076E-02	.4130	1.034E-02	.3971	5.195E-03
2 2329(450)	12.16	11.24	8.132E-03	.3122	1.076E-02	.4130	1.034E-02	.3971	5.195E-03
1 604(450)	13.23	12.34	7.768E-03	.2982	1.028E-02	.3946	9.882E-03	.3794	4.963E-03
2 2330(450)	13.23	12.34	7.768E-03	.2982	1.028E-02	.3946	9.882E-03	.3794	4.963E-03

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V41M-N28 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL M

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
A	11	TRIM				S	.110	.020	1.189E 06	4.189E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	555.4	1313	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
95.3	.057	2.563	3823	5.047E-05	7.675E-08	2.514E 06	2.605E-02	1.699E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAOAR)	TRAN(TO)	BETA(TO)
SILES 56	389	350	91	.0652	3.400E-01	4.1454E-01

	PIC NO	TIME	(ELTIME)	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	405(350)	14.29	13.35	7.4[illegible]E-03	.2463	9.867E-03	.3788	9.487E-03	.3642	4.764E-03
S	2331(350)	14.29	13.37	7.4[illegible]E-03	.2463	9.867E-03	.3788	9.487E-03	.3642	4.764E-03
I	406(350)	15.25	14.47	7.175E-03	.2756	9.493E-03	.3644	9.127E-03	.3504	4.584E-03
S	2332(350)	15.36	14.47	7.175E-03	.2756	9.493E-03	.3644	9.127E-03	.3504	4.584E-03
I	407(350)	16.41	15.52	6.9[illegible]E-03	.2659	9.166E-03	.3519	8.812E-03	.3383	4.426E-03
S	2333(350)	16.41	15.52	6.9[illegible]E-03	.2659	9.166E-03	.3519	8.812E-03	.3383	4.426E-03
I	408(350)	17.49	16.55	6.6[illegible]E-03	.2572	8.863E-03	.3402	8.522E-03	.3271	4.280E-03
S	2334(350)	17.49	16.55	6.6[illegible]E-03	.2572	8.863E-03	.3402	8.522E-03	.3271	4.280E-03
I	409(350)	18.57	17.67	6.4[illegible]E-03	.2492	8.589E-03	.3297	8.258E-03	.3170	4.147E-03
S	2335(350)	18.57	17.67	6.4[illegible]E-03	.2492	8.589E-03	.3297	8.258E-03	.3170	4.147E-03
		19.44		MODEL HAS LEFT CENTERLINE						
I	410(350)	19.62	18.72	5.3[illegible]E-03	.2421	8.345E-03	.3203	8.023E-03	.3080	4.029E-03
S	2336(350)	19.62	18.72	5.3[illegible]E-03	.2421	8.345E-03	.3203	8.023E-03	.3080	4.029E-03
I	411(350)	20.69	19.85	5.133E-03	.2354	8.115E-03	.3115	7.802E-03	.2995	3.918E-03
S	2337(350)	20.69	19.85	5.133E-03	.2354	8.115E-03	.3115	7.802E-03	.2995	3.918E-03
I	412(350)	21.77	20.87	5.973E-03	.2293	7.903E-03	.3034	7.598E-03	.2917	3.816E-03
S	2338(350)	21.77	20.87	5.973E-03	.2293	7.903E-03	.3034	7.598E-03	.2917	3.816E-03
I	413(350)	22.82	21.93	5.828E-03	.2237	7.711E-03	.2960	7.414E-03	.2846	3.723E-03
S	2339(350)	22.82	21.93	5.828E-03	.2237	7.711E-03	.2960	7.414E-03	.2846	3.723E-03

2.9 $\lambda = 30°$

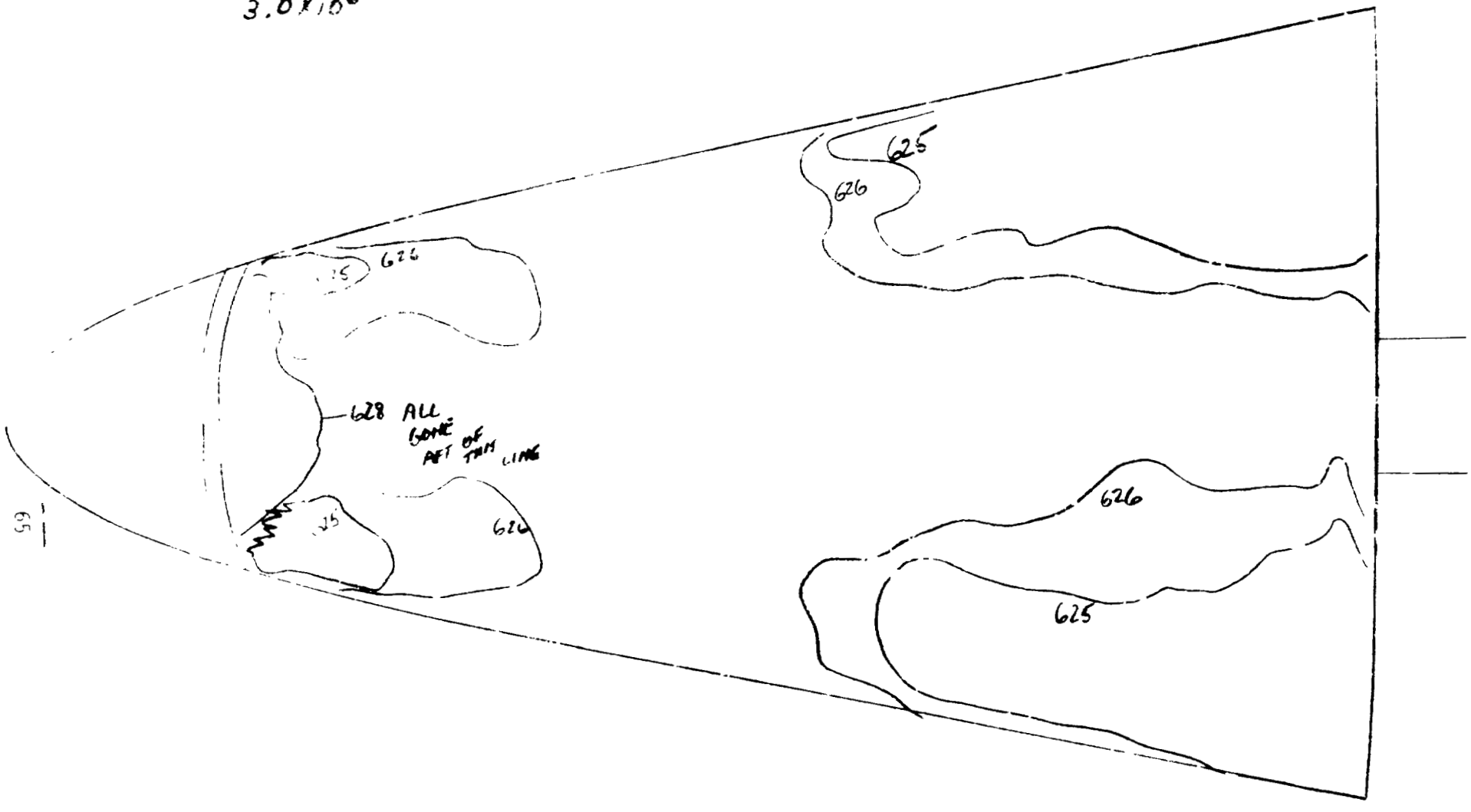
GRP 9

$T_{PC} = 350°F$

670 PSIA

870°F

3.0×10^6



0410-H28

WHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE R/L	DIA.	RER	HED
0	11	TRIP				5	.110	.020	1.410E 06	4.996E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.99	570.8	1324	29.97	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (IN .040 FT)	RTREF (IN .040 FT)
98.2	.054	3.045	3849	5.244E-05	7.701E-06	2.597E 06	2.467E-02	1.554E-02

CAPPEA (DEG F)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (NMCACAR)	TRANS(TO)	NETA(TO)
>ICE(S)	3PN					
	.24	350	90	.0052	3.300E-01	4.1150E-01

56

PIC NO	TIME (ELTIME)	X(IN)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 A16(350)	1.52	MODEL HAS NOT REACHED CENTERLINE						
> 2342(350)	1.52	MODEL HAS NOT REACHED CENTERLINE						
IN-FCT TIME = 1.62								
1 A17(350)	2.57 1.66	2.0-1E-02	.7240	2.702E-02	.9445	2.63HE-02	.9202	1.105E-02
> 2343(350)	2.57 1.66	2.0-1E-02	.7240	2.702E-02	.9445	2.63HE-02	.9202	1.105E-02
1 A18(350)	4.65 2.74	1.022E-02	.5656	2.137E-02	.7462	2.055E-02	.7149	8.609E-03
> 2344(350)	4.65 2.74	1.022E-02	.5656	2.137E-02	.7462	2.055E-02	.7149	8.609E-03
56 3.95								
1 A19(350)	6.70 3.79	1.37HE-02	.6408	1.816E-02	.6335	1.767E-02	.6094	7.318E-03
> 2345(350)	6.70 3.79	1.37HE-02	.6408	1.816E-02	.6335	1.767E-02	.6094	7.318E-03
1 A20(350)	5.78 4.87	1.216E-02	.5243	1.603E-02	.5590	1.562E-02	.5378	6.458E-03
> 2346(350)	5.78 4.87	1.216E-02	.5243	1.603E-02	.5590	1.562E-02	.5378	6.458E-03
1 A21(350)	6.85 5.96	1.1.1E-02	.3960	1.450E-02	.5059	1.395E-02	.4867	5.846E-03
> 2347(350)	6.85 5.96	1.1.1E-02	.3960	1.450E-02	.5059	1.395E-02	.4867	5.846E-03
1 A22(350)	7.90 6.99	1.015E-02	.4539	1.337E-02	.4663	1.286E-02	.4686	5.387E-03
> 2348(350)	7.90 6.99	1.015E-02	.3539	1.337E-02	.4663	1.286E-02	.4686	5.387E-03
1 A23(350)	8.98 8.07	9.066E-03	.3295	1.245E-02	.4341	1.197E-02	.4176	5.015E-03
> 2349(350)	8.98 8.07	9.066E-03	.3295	1.245E-02	.4341	1.197E-02	.4176	5.015E-03
1 A24(350)	10.06 9.15	8.873E-03	.3095	1.169E-02	.4078	1.125E-02	.3923	4.711E-03
> 2350(350)	10.06 9.15	8.873E-03	.3095	1.169E-02	.4078	1.125E-02	.3923	4.711E-03
1 A25(350)	11.11 10.20	8.033E-03	.2931	1.107E-02	.3862	1.065E-02	.3715	4.461E-03
> 2351(350)	11.11 10.20	8.033E-03	.2931	1.107E-02	.3862	1.065E-02	.3715	4.461E-03
1 A26(350)	12.18 11.27	7.942E-03	.2768	1.053E-02	.3673	1.013E-02	.3533	4.243E-03
> 2352(350)	12.18 11.27	7.942E-03	.2768	1.053E-02	.3673	1.013E-02	.3533	4.243E-03
	13.23	MODEL HAS LEFT CENTERLINE						
1 A27(350)	13.23 12.32	7.066E-03	.2588	1.007E-02	.3513	9.688E-03	.3379	4.058E-03
> 2353(350)	13.23 12.32	7.066E-03	.2588	1.007E-02	.3513	9.688E-03	.3379	4.058E-03

WRLOF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HED
9	11	TRIP				5	.110	.020	1.418E 06	4.996E 03

MACH NO	P (PSIA)	T(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.94	470.8	1360	20.97	.03	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUG/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH .060 FT)	DTREF (RH .060 FT)
98.2	.054	3.045	3834	4.366E-05	7.701E-08	2.537E 05	2.887E-02	1.556E-02

CAMERA	ROLL FO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACKK)	TRAN(TO)	BETA(TO)
(DF(T)	.09					
STLE(S)	424	350	98	.0652	3.360E-01	4.1156E-01
36						

	MIC NO	TIME (SECTIME)		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	42+(15)	14.1	14.6	7.310E-03	.2557	9.658E-03	.3369	9.291E-03	.3241	3.892E-03
2	2354(15)	14.21	14.6	7.310E-03	.2557	9.658E-03	.3369	9.291E-03	.3241	3.892E-03
1	42+(15)	15.19	14.6	7.0-2E-03	.2460	9.292E-03	.3241	8.932E-03	.3118	3.746E-03
2	2355(15)	15.29	14.6	7.0-2E-03	.2460	9.292E-03	.3241	8.934E-03	.3118	3.746E-03

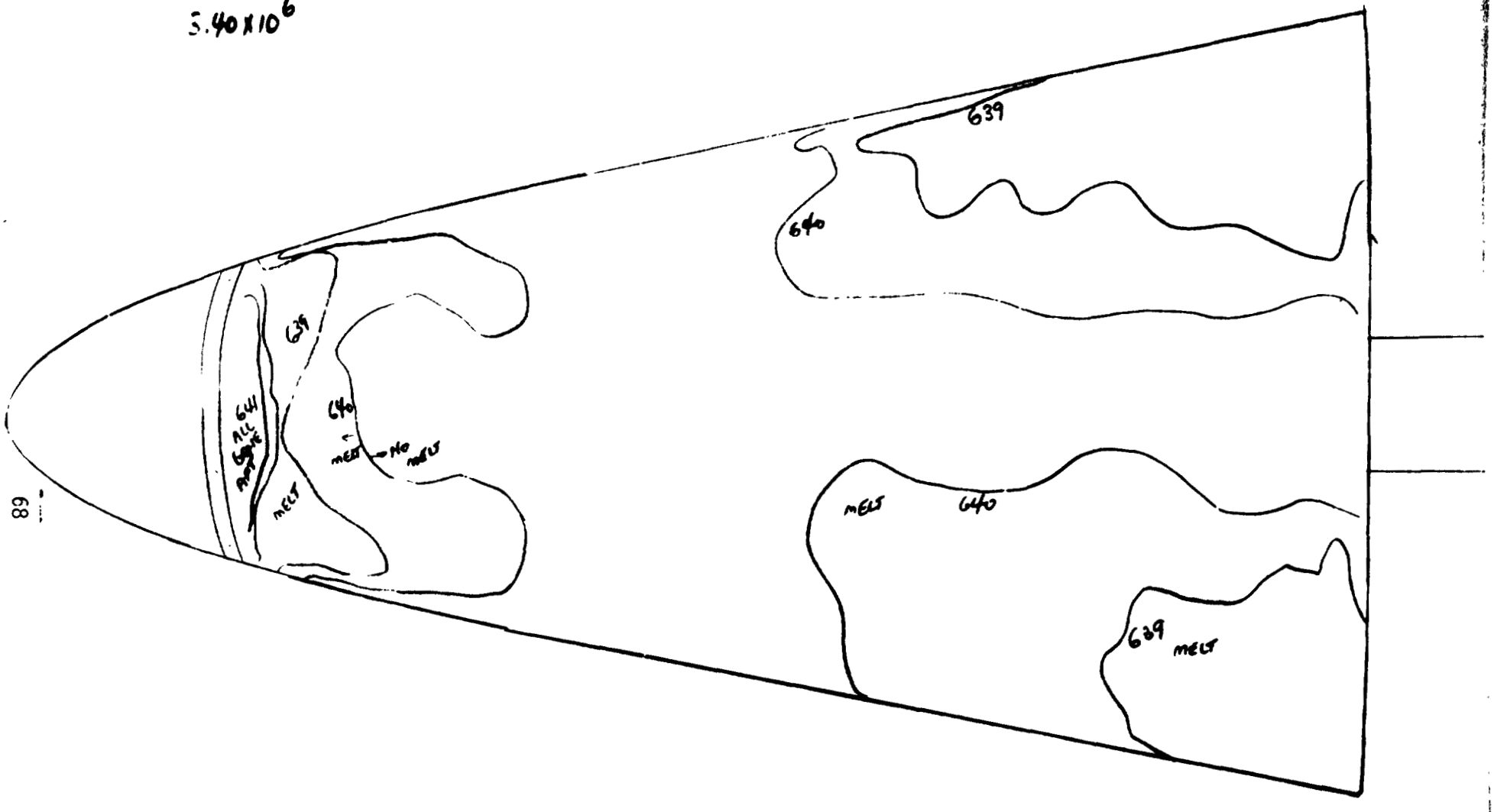
389
GRP10

$\alpha = 30°$

775 PSIA
875°F
5.40×10^6

$T_{RC} = 350°F$

635 IN FR ℄



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NASA-RI   OH 54                       AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE                           10- 8-74          PAGE  1
                                        VON KARMAN GAS DYNAMICS FACILITY
VA1B-A26                                  50 INCH HYPERSONIC TUNNEL B

GROUP  CONFIG          *** MODEL DESCRIPTION ***             GAP LOCATION/SIZE      TRIP LOCATION/SIZE       REX          RED
                                                             X/L   WIDTH  DEPTH     TYPE    X/L    DIA.
 19     11                        TRIP                                               S     .110   .020   1.609E 06   5.671E 03
                            MACH NO    PO(PSIA)  TO(DEG R)  ALPHA-MODEL  ALPHA-SECTOR  ALPHA-PREBEND  ROLL-MODEL  YAW
                              8.00       774.3      1336       29.97          .03          30.00           0         0
 T-INF     P-INF    Q-INF    V-INF      RHO-INF        MU-INF        RE/FT        HREF          STREF
(DEG R)   (PSIA)   (PSIA)   (FT/SEC)   (SLUGS/FT3)   (LB-SEC/FT2)   (FT-1)     (R= .040 FT)  (R= .040 FT)
 96.8       .079    1.533     3857      6.475E-05     7.792E-08   3.403E 06    3.077E-02     1.458E-02
CAMERA          ROLL NO  PAINT TEMP (DEG F)   INITIAL TEMP (DEG F)   SQUARE ROOT (RHOCACK)     TRAN(TO)    BETA(TO)
10(  1)           384
57  (5)           426         350                      92                     .0652
56                                                                                            3.292E-01  4.0000E-01

  PIC NO       TIME  DELTIME      H(TO)      H(T )/HREF    H(.9TO)    H(.9TO)/HREF H( .912TO)  H( .912TO)/HREF  ST(TO)
1   632(350)   1.52             MODEL HAS NOT REACHED CENTERLINE
2   2358(350)  1.52             MODEL HAS NOT REACHED CENTERLINE
INJECT TIME =       1.62
1   633(350)   2.57    1.64     2.063E-02     .8676      2.055E-02     .8679      2.556E-02       .8707        9.392E-03
2   2359(350)  2.57    1.64     2.063E-02     .8676      2.055E-02     .8679      2.556E-02       .8707        9.392E-03
1   634(350)   3.65    2.74     1.576E-02     .6123      2.088E-02     .6722      1.991E-02       .5472        7.317E-03
2   2360(350)  3.65    2.74     1.576E-02     .6123      2.088E-02     .6722      1.991E-02       .5472        7.317E-03
56                     3.87
1   635(350)   4.70    3.76     1.340E-02     .4355      1.758E-02     .5715      1.693E-02       .5501        6.220E-03
2   2361(350)  4.70    3.76     1.340E-02     .4355      1.758E-02     .5715      1.693E-02       .5501        6.220E-03
1   636(350)   5.78    4.87     1.212E-02     .3943      1.552E-02     .5963      1.494E-02       .4855        5.489E-03
2   2362(350)  5.78    4.87     1.212E-02     .3943      1.552E-02     .5963      1.494E-02       .4855        5.489E-03
1   637(350)   6.65    5.94     1.070E-02     .3474      1.404E-02     .4544      1.352E-02       .4393        4.967E-03
2   2363(350)  6.65    5.94     1.070E-02     .3474      1.404E-02     .4544      1.352E-02       .4393        4.967E-03
1   638(350)   7.50    6.99     9.862E-03     .3206      1.294E-02     .4207      1.246E-02       .4050        4.579E-03
2   2364(350)  7.50    6.99     9.862E-03     .3206      1.294E-02     .4207      1.246E-02       .4050        4.579E-03
1   639(350)   8.58    8.07     9.111E-03     .2986      1.205E-02     .3916      1.160E-02       .3770        4.263E-03
2   2365(350)  8.58    8.07     9.111E-03     .2986      1.205E-02     .3916      1.160E-02       .3770        4.263E-03
1   640(350)  10.06    9.15     8.624E-03     .2803      1.132E-02     .3678      1.089E-02       .3541        4.004E-03
2   2366(350) 10.06    9.15     8.624E-03     .2803      1.132E-02     .3678      1.089E-02       .3541        4.004E-03
1   641(350)  11.11   10.20     8.167E-03     .2655      1.072E-02     .3484      1.032E-02       .3354        3.792E-03
2   2367(350) 11.11   10.20     8.167E-03     .2655      1.072E-02     .3484      1.032E-02       .3354        3.792E-03
              12.06             MODEL HAS LEFT CENTERLINE
1   642(350)  12.18   11.27     7.784E-03     .2525      1.019E-02     .3313      9.813E-03       .3190        3.606E-03
2   2368(350) 12.18   11.27     7.784E-03     .2525      1.019E-02     .3313      9.813E-03       .3190        3.606E-03
1   643(350)  13.23   12.33     7.462E-03     .2415      9.749E-03     .3169      9.385E-03       .3051        3.449E-03
2   2369(350) 13.23   12.33     7.462E-03     .2415      9.749E-03     .3169      9.385E-03       .3051        3.449E-03
```

V41H-H2A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
10	11	TRIP				S	.110	.020	1.609E 06	5.671E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	774.3	1336	29.97	.03	30.00	0	0.

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .060 FT)	SWREF (H= .060 FT)
96.8	.579	3.553	3557	6.475E-05	7.792E-08	3.403E 06	3.077E-02	1.458E-02

CAPPHA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	TRAN(TO)	BETA(TO)
10P(T)	399					
31D(S)	.24	350	92	.0652	3.292E-01	4.0000E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.91210)	H(.91210)/HREF	ST(TO)
1	46(1350)	14.31	13.6	7.126E-03	.2314	9.304E-03	.3039	9.001E-03	.2926	3.308E-03
3	237(1450)	14.31	14.6	7.126E-03	.2314	9.304E-03	.3039	9.001E-03	.2926	3.308E-03
1	46(1350)	15.39	14.6	6.856E-03	.2228	8.995E-03	.2924	8.660E-03	.2815	3.182E-03
3	237(1450)	15.39	14.6	6.856E-03	.2228	8.995E-03	.2924	8.660E-03	.2815	3.182E-03

389

GRP 11

775 PSIA

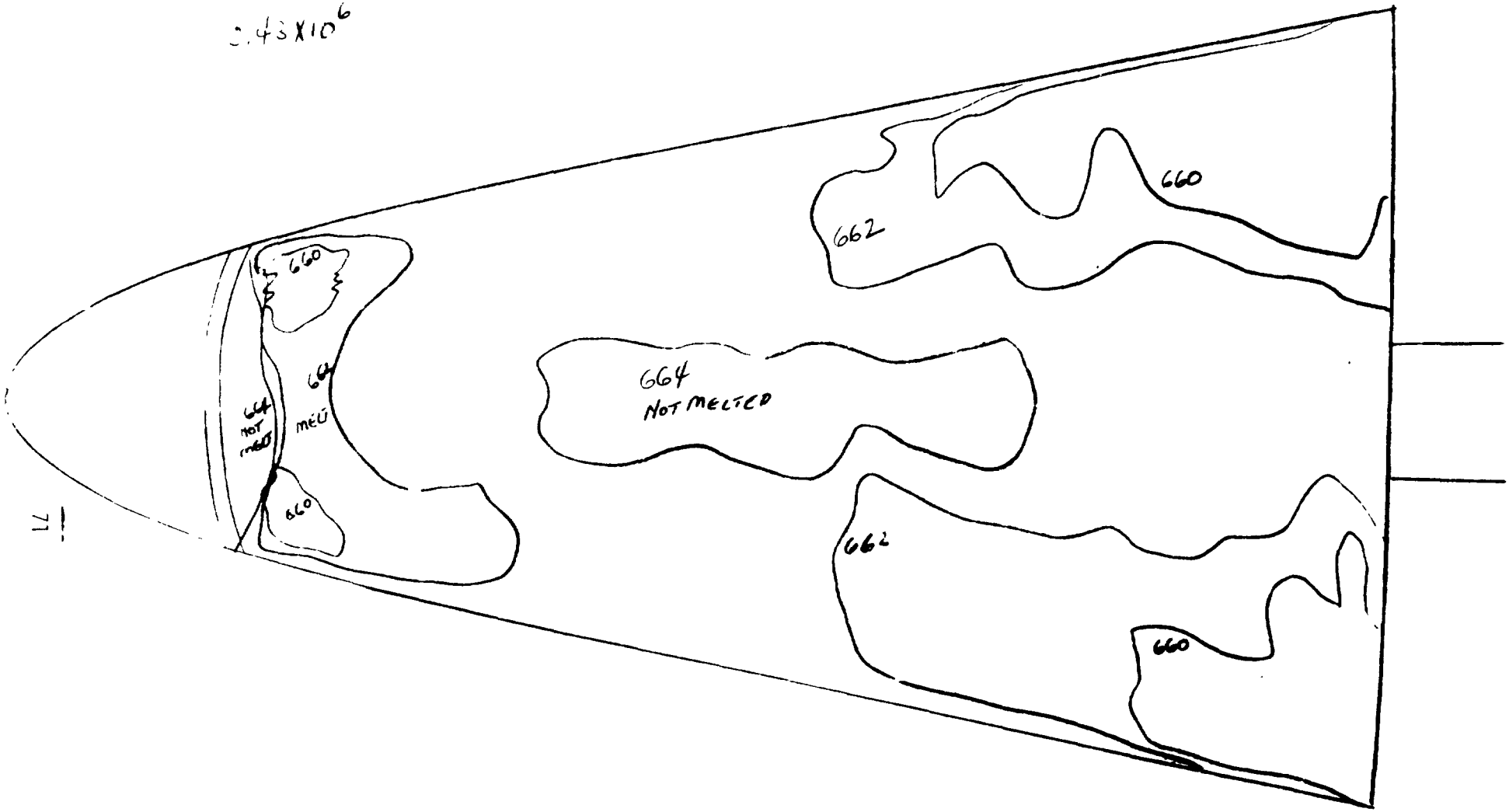
875 °F

3.43×10^6

$\alpha = 30°$

$T_{PC} = 400°F$

651 1ST FRE



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
11	11	TRIP				S	.110	.020	1.624E 06	5.721E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
4.00	775.3	1329	29.97	.03	30.00	.0	.0

TWF (DEG R)	P-INF (PSIA)	U-INF (FT/SEC)	V-INF	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HWEF (W= .060 FT)	SIWEF (W= .040 FT)
96.3	.079	3.556	3967	4.415E-05	7.753E-08	3.433E 06	3.076E-02	1.453E-02

LAMFRA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	HETA(TO)
TOP(T)	389					
STLE(S)	424	400	ME	.0669	4.010E-01	5.333OE-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
	460(400)	1.45		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.60							
I	449(400)	2.50	1.60	2.702E-02	.4045	3.772E-02	1.2243	3.612E-02	1.1764	1.284E-02
I	450(400)	3.52	2.63	2.172E-02	.3081	2.946E-02	.9579	2.820E-02	.9168	1.002E-02
SG			3.92							
I	451(400)	4.57	3.68	1.835E-02	.5967	2.488E-02	.8090	2.383E-02	.7748	8.470E-03
I	452(400)	5.63	4.73	1.819E-02	.5263	2.145E-02	.7135	2.102E-02	.6833	7.470E-03
S	237A(400)	5.63	4.73	1.819E-02	.5263	2.145E-02	.7135	2.102E-02	.6833	7.470E-03
I	453(400)	6.70	5.81	1.461E-02	.4759	1.961E-02	.6440	1.897E-02	.6167	6.742E-03
S	237C(400)	6.70	5.81	1.461E-02	.4750	1.961E-02	.6440	1.897E-02	.6167	6.742E-03
I	454(400)	7.75	6.86	1.346E-02	.4371	1.823E-02	.5925	1.765E-02	.5675	6.204E-03
S	237E(400)	7.75	6.86	1.346E-02	.4371	1.823E-02	.5925	1.765E-02	.5675	6.204E-03
I	455(400)	8.83	7.93	1.250E-02	.4063	1.694E-02	.5509	1.623E-02	.5276	5.768E-03
S	237F(400)	8.83	7.93	1.250E-02	.4063	1.694E-02	.5509	1.623E-02	.5276	5.768E-03
I	456(400)	9.88	8.98	1.174E-02	.3818	1.592E-02	.5177	1.525E-02	.4957	5.420E-03
S	237H(400)	9.88	8.98	1.174E-02	.3818	1.592E-02	.5177	1.525E-02	.4957	5.420E-03
I	457(400)	10.96	10.06	1.110E-02	.3608	1.505E-02	.4892	1.441E-02	.4685	5.122E-03
S	237J(400)	10.96	10.06	1.110E-02	.3608	1.505E-02	.4892	1.441E-02	.4685	5.122E-03
I	458(400)	12.03	11.14	1.055E-02	.3430	1.430E-02	.4650	1.370E-02	.4453	4.868E-03
S	237L(400)	12.03	11.14	1.055E-02	.3430	1.430E-02	.4650	1.370E-02	.4453	4.868E-03
I	459(400)	13.08	12.19	1.008E-02	.3278	1.367E-02	.4445	1.309E-02	.4256	4.653E-03
S	237M(400)	13.08	12.19	1.008E-02	.3278	1.367E-02	.4445	1.309E-02	.4256	4.653E-03
I	460(400)	14.16	13.24	9.666E-03	.3142	1.310E-02	.4260	1.255E-02	.4080	4.460E-03
S	237O(400)	14.16	13.2	9.666E-03	.3142	1.310E-02	.4260	1.255E-02	.4080	4.460E-03
I	461(400)	15.21	14.32	9.304E-03	.3025	1.261E-02	.4101	1.208E-02	.3927	4.294E-03
S	237Q(400)	15.21	14.32	9.304E-03	.3025	1.261E-02	.4101	1.208E-02	.3927	4.294E-03

GROUP CONFIG *** MODEL DESCRIPTION ***

11 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
			5	.110	.020	1.6266 06	5.721E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
8.00	775.3	1329	29.07	.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	AREF (W= .040 FT)	SIREF (W= .040 FT)
96.3	.078	3.558	3067	6.915E-05	7.7535-08	3.433E 06	3.076E-02	1.453E-02

LAMBDA (DEG)	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RNOCAEX)	TRAN(FO)	BETA(TO)
10	286					
51.5	424	400	86	.0660	4.016E-01	5.3338E-01
36						

PIC NO	TIME (ELTIME		H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1 662(400)	16.28	15.35	8.973E-03	.2917	1.216E-02	.3955	1.165E-02	.3788	4.141E-03
2 23H6(400)	16.28	15.39	8.973E-03	.2917	1.216E-02	.3955	1.165E-02	.3788	4.141E-03
	17.21		MODEL WAS LEFT CENTERLINE						
1 653(400)	17.25	16.07	8.675E-03	.2829	1.176E-02	.3834	1.126E-02	.3662	4.003E-03
2 23H5(400)	17.26	16.67	8.675E-03	.2820	1.176E-02	.3834	1.126E-02	.3662	4.003E-03
1 656(400)	18.42	17.52	8.411E-03	.2734	1.140E-02	.3707	1.092E-02	.3550	3.881E-03
2 23H6(400)	18.42	17.52	8.411E-03	.27[illegible]6	1.140E-02	.3707	1.092E-02	.3550	3.881E-03
1 665(400)	19.09	18.62	8.136E-03	.2646	1.107E-02	.3598	1.060E-02	.3446	3.767E-03
2 23H7(400)	19.09	18.62	8.136E-03	.2646	1.107E-02	.3598	1.060E-02	.3446	3.767E-03
1 666(400)	20.54	19.68	7.928E-03	.2582	1.077E-02	.3501	1.031E-02	.3352	3.665E-03
2 23H8(400)	20.57	19.68	7.937E-03	.2580	1.076E-02	.3498	1.030E-02	.3350	3.663E-03

389
GRP 12

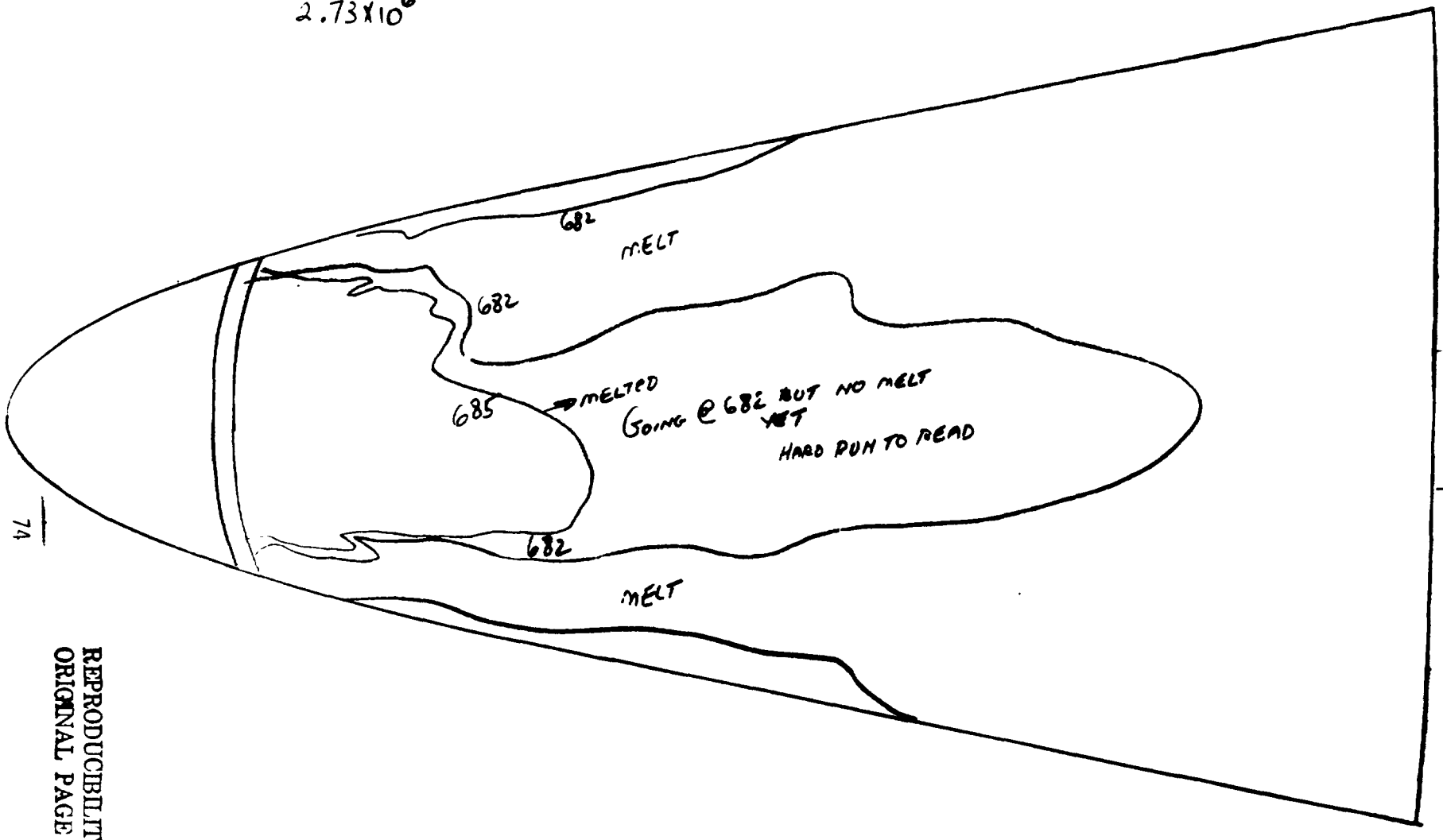
$\alpha = 30°$

672 1st FR ℄

$T_{PC} = 350°F$

610 PSIA
865°F

2.73×10^6



V-1H-824

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
12	11	TRIP				S	.110	.020	1.249E 06	4.544E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.99	605.9	1318	30.00	.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (W= .040 FT)	SREF (W= .040 FT)
95.7	.063	2.76	3830	5.485E-05	7.706E-08	2.726E 06	2.723E-02	1.630E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAA)	TRAN(TO)	BETA(TO)
IOF(T)	289					
SILF(S)	424	350	86	.0657	3.421E-01	4.220YE-01

SG

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
T	6621(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
S	2398(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.65							
T	670(350)	2.57	1.65	2.146E-02	.7874	2.830E-02	1.0395	2.721E-02	.9996	1.258E-02
S	2399(350)	2.57	1.65	2.146E-02	.7874	2.830E-02	1.0395	2.721E-02	.9996	1.258E-02
T	671(350)	3.62	2.72	1.675E-02	.6152	2.211E-02	.8122	2.126E-02	.7810	9.826E-03
S	2391(350)	3.62	2.72	1.675E-02	.6152	2.211E-02	.8122	2.126E-02	.7810	9.826E-03
SG			3.95							
T	672(350)	4.70	3.78	1.416E-02	.5202	1.870E-02	.6868	1.798E-02	.6604	8.308E-03
S	2392(350)	4.70	3.78	1.416E-02	.5202	1.870E-02	.6868	1.798E-02	.6604	8.308E-03
T	673(350)	5.78	4.85	1.243E-02	.4569	1.642E-02	.6358	1.568E-02	.5626	7.329E-03
S	2393(350)	5.78	4.85	1.243E-02	.4569	1.642E-02	.6358	1.568E-02	.5626	7.329E-03
T	674(350)	6.83	5.90	1.133E-02	.4160	1.495E-02	.5493	1.434E-02	.5268	6.644E-03
S	2394(350)	6.83	5.90	1.133E-02	.4160	1.495E-02	.5493	1.434E-02	.5268	6.644E-03
T	675(350)	7.90	6.98	1.042E-02	.3826	1.375E-02	.5051	1.322E-02	.4857	6.111E-03
S	2395(350)	7.90	6.98	1.042E-02	.3826	1.375E-02	.5051	1.322E-02	.4857	6.111E-03
T	676(350)	8.95	8.03	9.711E-03	.3567	1.282E-02	.4709	1.231E-02	.4521	5.697E-03
S	2396(350)	8.95	8.03	9.711E-03	.3567	1.282E-02	.4709	1.231E-02	.4521	5.698E-03
S	2397(350)	10.03	9.11	9.149E-03	.3360	1.208E-02	.4432	1.158E-02	.4252	5.350E-03
T	677(350)	10.06	9.13	9.147E-03	.3359	1.207E-02	.4416	1.156E-02	.4246	5.342E-03
T	678(350)	11.11	10.18	8.624E-03	.3168	1.138E-02	.4182	1.095E-02	.4021	5.059E-03
S	2398(350)	11.11	10.18	8.624E-03	.3168	1.138E-02	.4182	1.095E-02	.4021	5.059E-03
T	679(350)	12.16	11.23	8.211E-03	.3016	1.084E-02	.3981	1.042E-02	.3829	4.816E-03
S	2399(350)	12.16	11.23	8.211E-03	.3016	1.084E-02	.3981	1.042E-02	.3829	4.816E-03
T	680(350)	13.23	12.31	7.844E-03	.2881	1.036E-02	.3803	9.957E-03	.3657	4.601E-03
S	2400(350)	13.23	12.31	7.844E-03	.2881	1.036E-02	.3803	9.957E-03	.3657	4.601E-03

941H-H2A

WRCUT	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REX	RED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
12	11	TRIP				S	.110	.020	1.249E 06	4.544E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.99	605.9	1316	30.00	.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RE .040 FT)	STREF (RE .040 FT)
95.7	.053	2.796	3030	5.695E-05	7.705E-06	2.726E 06	2.723E-02	1.632E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAK)	TRAN(TO)	HETA(TO)
90	300					
SLEEVE(S)	424	350	86	.0052	3.421E-01	4.220E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	6411(350)	14.31	13.34	7.522E-03	.2763	9.930E-03	.3647	9.549E-03	.3507	4.412E-03
2	2401(350)	14.31	13.34	7.522E-03	.2763	9.930E-03	.3647	9.549E-03	.3507	4.412E-03
1	6421(350)	15.36	14.44	7.243E-03	.2660	9.582E-03	.3512	9.195E-03	.3377	4.249E-03
2	2402(350)	15.36	14.44	7.243E-03	.2660	9.582E-03	.3512	9.195E-03	.3377	4.249E-03
1	6431(350)	16.36	15.51	6.967E-03	.2558	9.224E-03	.3388	8.870E-03	.3258	4.090E-03
2	2403(350)	16.36	15.51	6.967E-03	.2558	9.224E-03	.3388	8.870E-03	.3258	4.090E-03
1	6441(350)	17.34	16.52	6.702E-03	.2462	8.876E-03	.3274	8.584E-03	.3153	3.966E-03
2	2404(350)	17.31	16.52	6.702E-03	.2462	8.876E-03	.3274	8.577E-03	.3150	3.963E-03
		18.67		MODEL WAS LEFT CENTERLINE						
1	6451(350)	19.67	17.64	5.522E-03	.2027	6.850E-03	.2177	6.318E-03	.2055	3.044E-03
2	2405(350)	19.67	17.64	5.522E-03	.2027	6.850E-03	.2177	6.318E-03	.2055	3.044E-03
1	6461(350)	19.66	18.72	4.381E-03	.1609	5.398E-03	.1846	5.075E-03	.1966	2.731E-03
2	2406(350)	19.66	18.72	4.381E-03	.1609	5.398E-03	.1846	5.075E-03	.1966	2.731E-03
1	6471(350)	20.69	19.77	3.140E-03	.1273	4.171E-03	.1601	3.858E-03	.1466	2.031E-03
2	2407(350)	20.69	19.77	3.140E-03	.1273	4.171E-03	.1601	3.858E-03	.1466	2.031E-03

GROUP 13 MELT LINES NOT READABLE

NASA-MT OH 56

V41H-R20

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

10- 8-74 PAGE 1

GROUP CONFIG *** MODEL DESCRIPTION ***

13 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	PER	RED
			5	.110	.020	1.29RE 04	4.576E 03

MACH NO	P(PSIA)	T(DEG F)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREMENO	ROLL-MODEL	YAW
7.99	410.2	1914	20.00	10.00	30.00	0.	0.

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSF)	V-INF (FT/SEC)	MU-INF (SLUGS/FT-SEC)	RE/FT (FT-1)	HREF (= .060 FT)	STREF (= .060 FT)
95.0	.0[illegible]	2.8[illegible]6	3831	5.22E-05	7.709E-06	2.744E 04	2.732E-02	1.625E-02

CONFIG	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE FOOT (HMSCAR)	THAR(TO)	BETA(TO)
.OF(T)	.21					
SI.E(S)	3H5	350	.5	.0652	3.342E-01	4.0947E-01
SG						

PTS NO	TIME (DEG TIME)		H(TO)	H(TO)/HREF	H(.99TO)	H(.99TO)/HREF	H(.992TO)	H(.992TO)/HREF	ST(TO)
S 2445(350)	1.50		MODEL AS NOT REACHED (EMPTHRINE						
INDEX TIME =		1.62							
S 2446(350)	2.55	1.64	2.0[illegible]E-2	.7614	2.7[illegible]E-02	1.0053	2.81[illegible]E-02	1.0319	1.213E-02
S 2447(350)	3.[illegible]	2.[illegible]	1.[illegible]E-02	.5745	2.2455E-02	.7850	2.20[illegible]E-02	.6052	9.462E-03
SG		3.47							
S 2448(350)	4.65	3.74	1.3775E-02	.5442	1.8195E-02	.6656	1.865E-02	.6827	8.023E-03
S 2449(350)	5.73	4.92	1.214E-02	.4662	1.603E-02	.5865	1.644E-02	.6016	7.070E-03
S 2450(350)	6.78	5.87	1.1[illegible]E-02	.4024	1.452E-02	.5314	1.46[illegible]E-02	.5451	6.485E-03
S 2451(350)	7.83	6.93	1.0[illegible]E-02	.3706	1.337E-02	.4893	1.372E-02	.5020	5.898E-03
S 2452(350)	8.90	7.99	9.419E-03	.3447	1.244E-02	.4552	1.276E-02	.4670	5.407E-03
S 2453(350)	9.96	9.05	8.855E-03	.3241	1.169E-02	.4279	1.194E-02	.4390	5.159E-03
S 2454(350)	11.01	10.11	8.361E-03	.3057	1.107E-02	.4051	1.135E-02	.4155	4.882E-03
S 2455(350)	12.08	11.17	7.967E-03	.2916	1.052E-02	.3851	1.079E-02	.3950	4.641E-03
S 2456(350)	13.13	12.22	7.617E-03	.2788	1.004E-02	.3691	1.032E-02	.3776	4.437E-03
S 2457(350)	14.19	13.28	7.309E-03	.2675	9.652E-03	.3533	9.901E-03	.3624	4.258E-03
S 2458(350)	15.24	14.33	7.035E-03	.2575	9.291E-03	.3400	9.531E-03	.3488	4.099E-03
S 2459(350)	16.31	15.40	6.786E-03	.2484	8.961E-03	.3280	9.192E-03	.3364	3.953E-03
S 2460(350)	17.36	16.45	6.566E-03	.2403	8.670E-03	.3173	8.893E-03	.3255	3.825E-03
S 2461(350)	18.42	17.51	6.365E-03	.2330	8.408E-03	.3076	8.622E-03	.3156	3.708E-03
S 2462(350)	19.47	18.56	6.182E-03	.2263	8.164E-03	.2988	8.374E-03	.3065	3.601E-03
S 2463(350)	20.54	19.63	6.011E-03	.2200	7.937E-03	.2905	8.142E-03	.2980	3.501E-03
S 2464(350)	21.59	20.68	5.850E-03	.2143	7.733E-03	.2830	7.932E-03	.2903	3.411E-03
S 2465(350)	22.65	21.74	5.712E-03	.2091	7.543E-03	.2761	7.738E-03	.2832	3.328E-03
S 2466(350)	23.72	22.81	5.576E-03	.2041	7.363E-03	.2695	7.553E-03	.2764	3.248E-03
S 2467(350)	24.77	23.86	5.4[illegible]2E-03	.1995	7.199E-03	.2635	7.385E-03	.2703	3.176E-03
S 2468(350)	25.82	24.91	5.339E-03	.1953	7.046E-03	.2579	7.227E-03	.2645	3.1[illegible]3E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REH	REO
19	11	TRIM				5	.110	.020	1.198E 06	4.574E 03

MACH NO.	P (PSIA)	T (DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEAD	ROLL-MODEL	YAW
7.99	410.2	1318	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .040 FT)	SIREF (R= .040 FT)
95.7	.053	2.816	3831	5.522E-05	7.708E 08	2.744E 05	2.732E-02	1.625E-02

CAPPA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCRCAK)	TRAN(TO)	RETA(TO)
10E(T) SILE(S) SG	6P1 346	350	95	.0652	3.342E-01	4.884E-01

PTC NO	TIME	(PL)TIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
> 246(150)	26.58	25.97	5.227E-03	.1713	6.922E-03	.2526	7.080E-03	.2591	3.045E-03
> 247(150)	27.15	27.04	5.161E-03	.1476	6.763E-03	.2475	6.937E-03	.2539	2.983E-03
> 471(150)	23.00	24.09	5.025E-03	.1439	6.695E-03	.2428	6.806E-03	.2491	2.927E-03
472(150)	32.05	24.14	4.933E-03	.1405	6.514E-03	.2384	6.682E-03	.2446	2.876E-03
> 267(150)	31.11	31.19	4.875E-03	.1774	6.410E-03	.2342	6.555E-03	.2403	2.823E-03
> 276(150)	32.14	31.27	4.725E-03	.1743	6.289E-03	.2302	6.451E-03	.2361	2.774E-03
> 275(150)	33.23	31.37	4.655E-03	.1714	6.186E-03	.2264	6.345E-03	.2322	2.729E-03
	32.63		MODEL HAS LEFT CENTERLINE						
> 276(150)	34.28	33.39	4.610E-03	.1587	6.088E-03	.2224	6.245E-03	.2283	2.686E-03
> 277(150)	35.36	34.45	4.537E-03	.1661	5.992E-03	.2193	6.146E-03	.2249	2.643E-03
> 278(150)	36.41	35.55	4.470E-03	.1636	5.902E-03	.2160	6.055E-03	.2216	2.604E-03

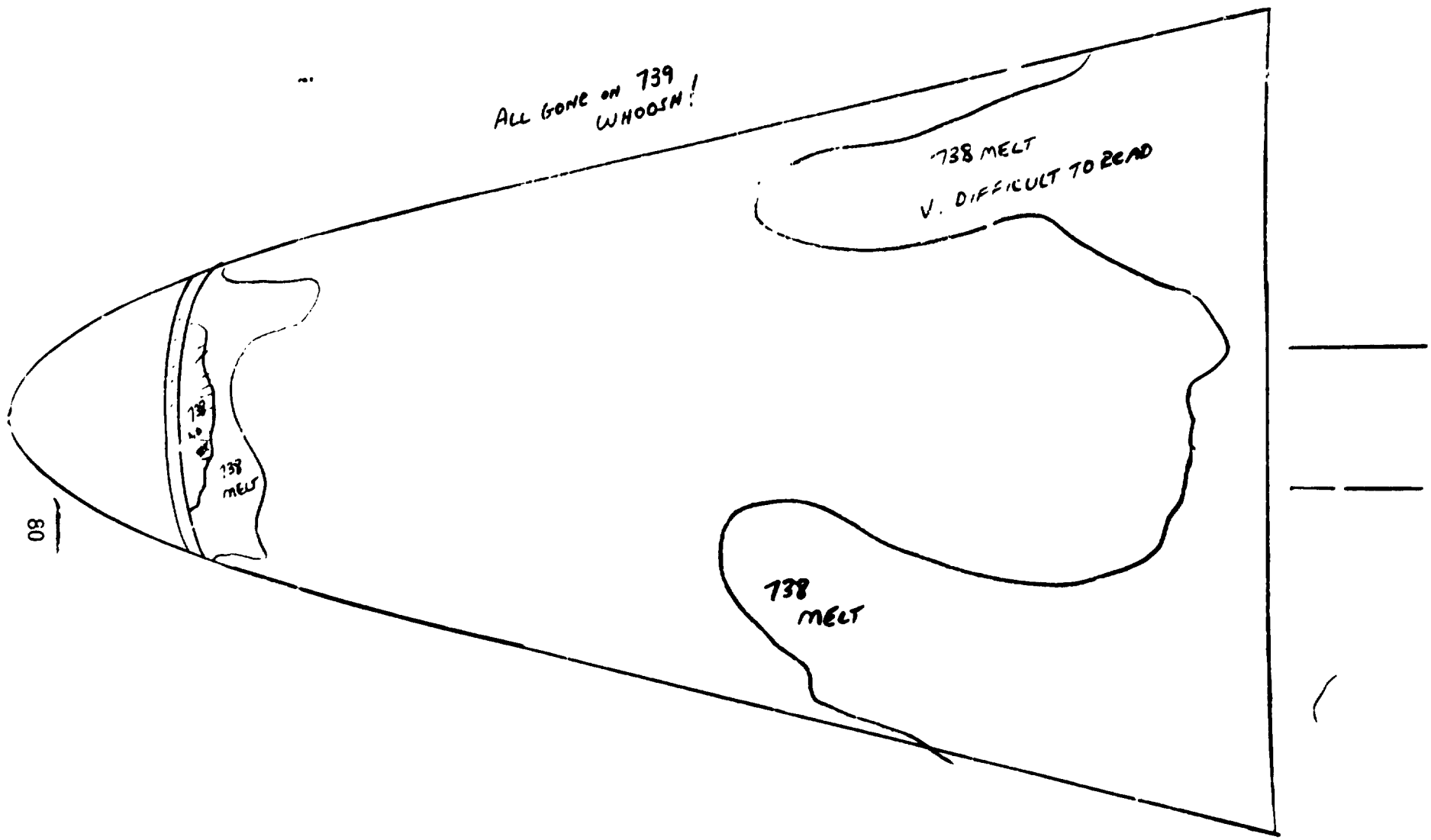
421
GRP 14

610 PSIA
865 °F
2.73×10^6

$\alpha = 40°$

$T_{PC} = 350°F$

738 is. Fr ℄



WRCHP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
14	11	TRIP				5	.110	.070	1.291E 06	4.549E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.99	608.0	1320	29.96	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RH-INF (LB-SEC**2/FT**4)	MU-INF (LB-SEC/FT**2)	RE/FT (FT-1)	RHEF (RH .040 FT)	STREF (RH .040 FT)
95.5	.083	2.8[illegible]	3831	5.6955E-05	7.717E-08	2.729E 06	2.728E-02	1.629E-02

CAMERA (OPTI)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACRA)	THAW(TO)	HETA(TO)
	.21					
>ILF(S)	386	350	49	.0682	3.3865-01	4.160HE-01
>6						

PIC NO	TIME (ELTIME)		H(TO)	HET(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.93*TO)	H(.93*TO)/HREF	ST(TO)
> 2481(150)	1.07		MODEL HAS NOT REACHED CENTERLINE						
> 730(150)	1.10		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.06							
1 731(150)	2.55	1.44	2.120E-02	.7772	2.79HE-02	1.0255	2.523E-02	.9248	1.248E-02
> 2482(150)	2.55	1.44	2.120E-02	.7772	2.79HE-02	1.0255	2.523E-02	.9248	1.248E-02
1 732(150)	3.50	2.64	1.655E-02	.6065	2.103E-02	.8063	1.964E-02	.7217	9.679E-03
> 2483(150)	3.50	2.69	1.655E-02	.6065	2.103E-02	.8063	1.964E-02	.7217	9.679E-03
>6		3.87							
1 733(150)	4.87	3.74	1.3[illegible]E-02	.5125	1.845E-02	.6763	1.664E-02	.6099	8.179E-03
> 2484(150)	4.87	3.74	1.3[illegible]E-02	.5125	1.845E-02	.6763	1.664E-02	.6099	8.179E-03
1 734(150)	5.73	4.82	1.23[illegible]E-02	.4531	1.631E-02	.5979	1.471E-02	.5392	7.231E-03
> 2485(150)	5.73	4.82	1.23[illegible]E-02	.4531	1.631E-02	.5979	1.471E-02	.5392	7.231E-03
1 735(150)	6.60	5.84	1.11[illegible]E-02	.4097	1.475E-02	.5406	1.330E-02	.4875	6.538E-03
> 2486(150)	6.60	5.86	1.11[illegible]E-02	.4097	1.475E-02	.5406	1.330E-02	.4875	6.538E-03
1 736(150)	7.68	6.97	1.02[illegible]E-02	.3767	1.356E-02	.4971	1.223E-02	.4483	6.012E-03
> 2487(150)	7.68	6.97	1.02[illegible]E-02	.3767	1.356E-02	.4971	1.223E-02	.4483	6.012E-03
1 737(150)	8.53	7.02	9.5[illegible]E-03	.3512	1.264E-02	.4633	1.140E-02	.4178	5.604E-03
> 2488(150)	8.53	7.02	9.5[illegible]E-03	.3512	1.264E-02	.4633	1.140E-02	.4178	5.604E-03
1 738(150)	10.01	9.1	8.9[illegible]E-03	.3297	1.187E-02	.4351	1.070E-02	.3923	5.262E-03
> 2489(150)	10.01	9.1	8.9[illegible]E-03	.3297	1.187E-02	.4351	1.070E-02	.3923	5.262E-03
	10.18		MODEL HAS LEFT CENTERLINE						
> 2490(150)	11.06	11.15	8.5[illegible]E-03	.3122	1.124E-02	.4119	1.013E-02	.3715	4.982E-03
1 739(150)	11.08	11.17	8.50[illegible]E-03	.3118	1.122E-02	.4114	1.012E-02	.3710	4.976E-03
1 74 (150)	12.13	11.22	8.0[illegible]E-03	.2969	1.068E-02	.3917	9.636E-03	.3537	4.737E-03
> 2491(150)	12.13	11.22	8.0[illegible]E-03	.2968	1.068E-02	.3917	9.636E-03	.3532	4.737E-03

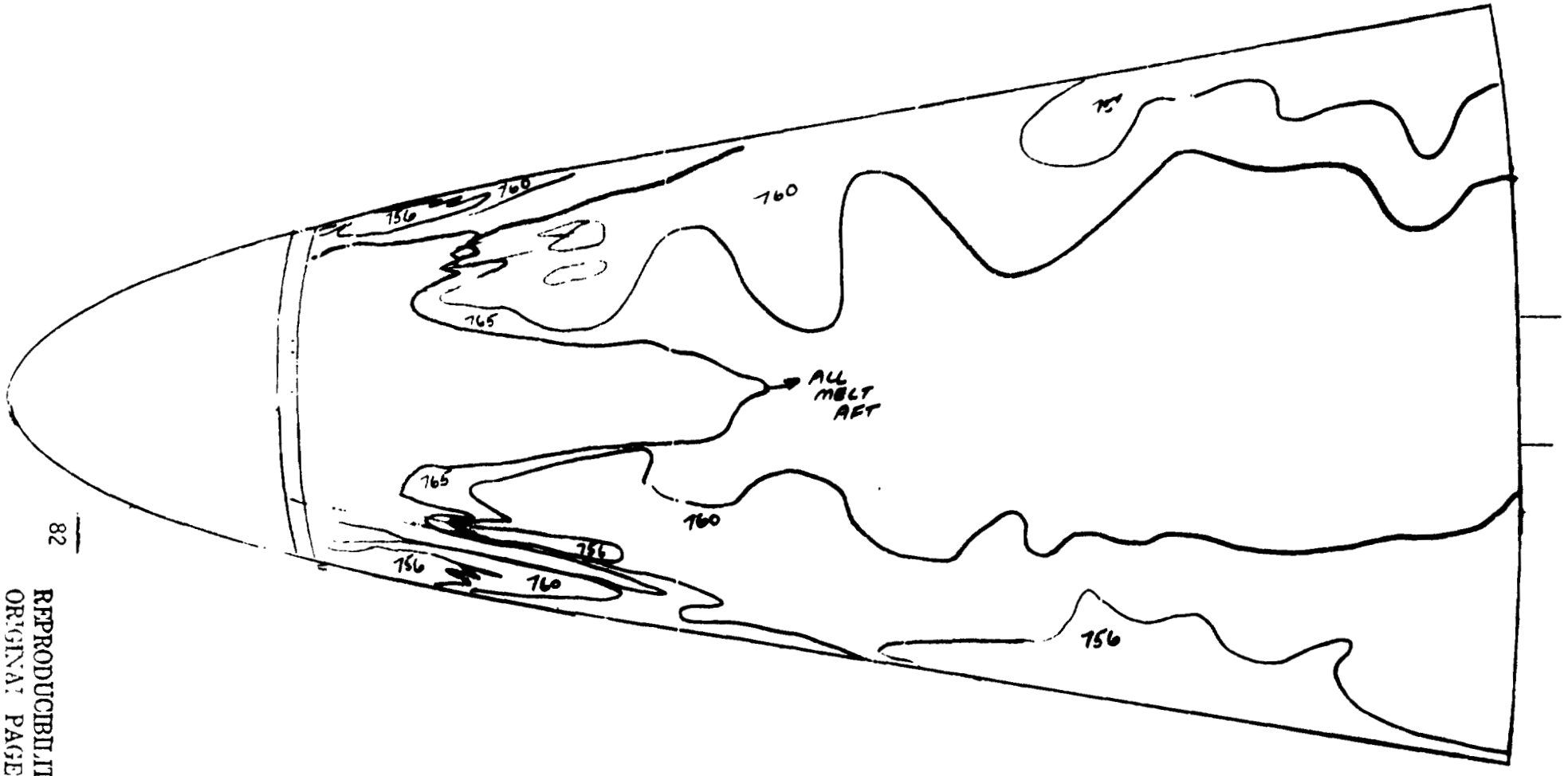
421
UTRP15

$\alpha = 20°$

$T_{PC} = 300°F$

746 1st Fr ℄

610 PSIA
865 °F
2.74×10^6



NASA-R1 OH 5S

V41H-R24

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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UNCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REA	RED
15	11	141P	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
						5	.110	.020	1.295E 06	4.564E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	408.6	1318	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RH-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RH .040 FT)	SREF (RH .040 FT)
95.7	.003	2.8 P	3830	5.505E-05	7.708E-08	2.738E 06	2.729E-02	1.627E-02

LAMBDA (DEG)	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACRK)	TRAN(TO)	BETA(TO)
DIC(S)	421					
36	286	300	95	.0636	2.742E-01	3.1892E-01

PIC NO	TIME (RELTIVE	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.8921TO)	H(.8921TO)/HREF	ST(TO)
1 7431(300)	1.50	MODEL HAS NOT REACHED CENTERLINE						
5 2496(300)	1.50	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 1.82								
1 744(300)	2.55 1.84	1.5[illegible]E-02	.5810	2.041E-02	.7480	2.08[illegible]E-02	.7652	9.283E-03
5 2498(300)	2.55 1.84	1.5[illegible]E-02	.5810	2.041E-02	.7480	2.08[illegible]E-02	.7652	9.283E-03
1 745(300)	3.62 2.71	1.231E-02	.4513	1.565E-02	.5810	1.622E-02	.5943	7.210E-03
5 2499(300)	3.62 2.71	1.231E-02	.4513	1.565E-02	.5810	1.622E-02	.5943	7.210E-03
36 3.87								
1 746(300)	4.70 3.73	1.062E-02	.3919	1.361E-02	.4916	1.372E-02	.5029	6.101E-03
5 2497(300)	4.70 3.73	1.062E-02	.3919	1.361E-02	.4916	1.372E-02	.5029	6.101E-03
1 747(300)	5.75 4.86	9.219E-03	.3379	1.187E-02	.4350	1.214E-02	.4450	5.398E-03
5 2 98(300)	5.75 4.86	9.219E-03	.3379	1.187E-02	.4350	1.214E-02	.4450	5.398E-03
1 748(300)	6.83 5.93	8.335E-03	.3056	1.074E-02	.3934	1.09[illegible]E-02	.4025	4.883E-03
5 24 (300)	6.83 5.93	8.335E-03	.3056	1.074E-02	.3934	1.09[illegible]E-02	.4025	4.883E-03
1 749(300)	7.88 6.97	7.6[illegible]E-03	.2816	9.892E-03	.3625	1.012E-02	.3709	4.499E-03
5 2500(300)	7.88 6.97	7.6[illegible]E-03	.2816	9.892E-03	.3625	1.012E-02	.3709	4.499E-03
1 75 (300)	8.95 8.04	7.151E-03	.2621	9.207E-03	.3374	9.419E-03	.3452	4.188E-03
5 2501(300)	8.95 8.04	7.151E-03	.2621	9.207E-03	.3374	9.419E-03	.3452	4.188E-03
1 751(300)	10.01 9.1[illegible]	6.725E-03	.2465	8.659E-03	.3173	8.85[illegible]E-03	.3246	3.938E-03
5 2502(300)	10.01 9.1[illegible]	6.725E-03	.2465	8.659E-03	.3173	8.85[illegible]E-03	.3245	3.938E-03
1 752(300)	11.08 10.17	6.360E-03	.2331	8.1[illegible]E-03	.3001	8.376E-03	.3070	3.724E-03
5 2503(300)	11.08 10.17	6.360E-03	.2331	8.1[illegible]E-03	.3001	8.376E-03	.3070	3.724E-03
1 753(300)	12.13 11.22	6.055E-03	.2219	7.745E-03	.2847	7.974E-03	.2922	3.565E-03
1 754(300)	13.21 12.3[illegible]	5.7[illegible]E-03	.2126	7.7[illegible]E-03	.2853	7.96[illegible]E-03	.2919	3.541E-03
5 2505(300)	13.21 12.[illegible]	5.7[illegible]E-03	.2126	7.44[illegible]E-03	.2729	7.617E-03	.2792	3.387E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REB
15	11	TRIM				S	.110	.020	1.295E 06	4.564E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-FREEWND	ROLL-MODEL	YAW
7.99	500.0	1318	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LBF-SEC/FT2)	RE/FT (FT-1)	AREF (RE .040 FT)	SREF (RE .040 FT)
95.7	.063	2.516	3830	5.505E-05	7.700E-08	2.73HE 06	2.729E-02	1.027E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	BETA(TO)
	.21					
SIFF(S)	386	300	85	.363E	2.782E-01	3.1892E-01
SG						

	PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	755(300)	14.29	14.38	5.5[illegible]E-03	.2092	7.140E-03	.2617	7.304E-03	.2677	3.248E-03
2	250E(300)	14.29	14.38	5.5[illegible]E-03	.2092	7.140E-03	.2617	7.304E-03	.2677	3.248E-03
1	756(300)	15.34	14.43	5.3[illegible]E-03	.1957	6.875E-03	.2520	7.033E-03	.2578	3.127E-03
2	2507(300)	15.34	14.43	5.3[illegible]E-03	.1957	6.875E-03	.2520	7.033E-03	.2578	3.127E-03
1	757(300)	16.41	15.51	5.1[illegible]E-03	.1888	6.632E-03	.2431	6.785E-03	.2486	3.017E-03
2	2508(300)	16.41	15.51	5.1[illegible]E-03	.1888	6.632E-03	.2431	6.785E-03	.2486	3.017E-03
1	758(300)	17.46	16.55	4.9[illegible]E-03	.1827	6.419E-03	.2352	6.566E-03	.2406	2.919E-03
2	2509(300)	17.46	16.55	4.9[illegible]E-03	.1827	6.419E-03	.2352	6.566E-03	.2406	2.919E-03
1	759(300)	18.56	17.63	4.8[illegible]E-03	.1770	6.219E-03	.2279	6.362E-03	.2332	2.829E-03
2	2510(300)	18.56	17.63	4.8[illegible]E-03	.1770	6.219E-03	.2279	6.362E-03	.2332	2.829E-03
1	760(300)	19.62	18.71	4.6[illegible]E-03	.1719	6.038E-03	.2213	6.176E-03	.2264	2.746E-03
2	2511(300)	19.62	18.71	4.6[illegible]E-03	.1719	6.038E-03	.2213	6.176E-03	.2264	2.746E-03
1	761(300)	20.67	19.76	4.5[illegible]E-03	.1672	5.875E-03	.2153	6.010E-03	.2202	2.672E-03
2	2512(300)	20.67	19.76	4.5[illegible]E-03	.1672	5.875E-03	.2153	6.010E-03	.2202	2.672E-03
1	762(300)	21.74	20.83	4.4[illegible]E-03	.1629	5.721E-03	.2097	5.853E-03	.2145	2.602E-03
2	2513(300)	21.74	20.83	4.4[illegible]E-03	.1629	5.721E-03	.2097	5.853E-03	.2145	2.602E-03
1	763(300)	22.80	21.89	4.3[illegible]E-03	.1589	5.582E-03	.2046	5.710E-03	.2093	2.539E-03
2	2514(300)	22.80	21.89	4.3[illegible]E-03	.1589	5.582E-03	.2046	5.710E-03	.2093	2.539E-03
		23.63		MODEL HAS LEFT CENTERLINE						
1	764(300)	23.63	22.94	4.2[illegible]E-03	.1551	5.450E-03	.1997	5.575E-03	.2043	2.479E-03
2	2515(300)	23.63	22.94	4.2[illegible]E-03	.1551	5.450E-03	.1997	5.575E-03	.2043	2.479E-03
1	765(300)	24.52	24.01	4.1[illegible]E-03	.1517	5.329E-03	.1953	5.451E-03	.1998	2.424E-03
2	2516(300)	24.52	24.01	4.1[illegible]E-03	.1517	5.329E-03	.1953	5.451E-03	.1998	2.424E-03

421

GP 16

$T_{pc} = 500°F$

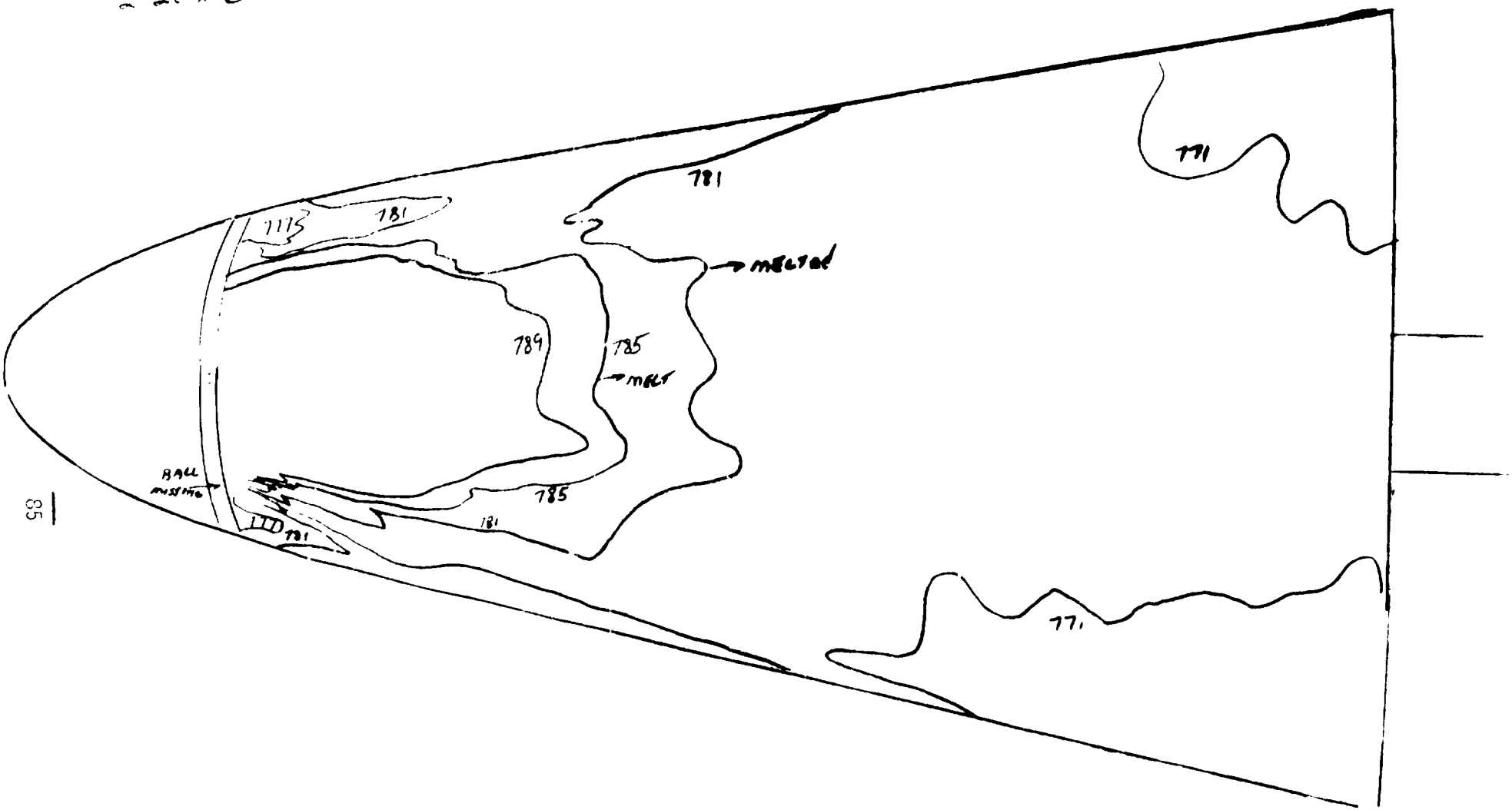
490 PSIA

850°F

2.23×10^6

771 1st Ice ℄

$\alpha = 30°$



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REX	RED
16	11	TRIP				S	.110	.020	1.053E 06	3.710E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	489.7	1312	30.01	-.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .060 FT)	SIREF (IN= .060 FT)
95.5	.051	2.273	4721	4.479E-05	7.688E-08	2.226E 06	2.453E-02	1.803E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOLACAR)	TRAN(TO)	BETA(TO)
10E(T)	421					
3ICE(S)	3P6	300	91	.0636	2.747E-01	3.1371E-01
3G						

	PIC NO	TIME DEL TIME	H(10)	H(10)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	76H(300)	1.50	MODEL HAS NOT REACHED CENTERLINE						
3	251H(303)	1.50	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.62							
1	76H(300)	2.57	1.04	1.5[illegible]E-02	.6[illegible]	1.09AE-02	.8160	1.927E-02	.7856	1.118E-02
3	252(300)	2.57	1.04	1.5[illegible]E-02	.6[illegible]	1.09AE-02	.8160	1.927E-02	.7856	1.118E-02
1	77(300)	3.62	2.71	1.211E-02	.4[illegible]	1.503E-02	.6371	1.508E-02	.6168	8.767E-03
3	252(300)	3.62	2.71	1.211E-02	.4[illegible]	1.503E-02	.6371	1.508E-02	.6168	8.767E-03
3G		3.91								
1	77(300)	4.70	3.79	1.025E-02	.4179	1.322E-02	.5591	1.276E-02	.5203	7.402E-03
3	252(300)	4.70	3.79	1.025E-02	.4179	1.322E-02	.5591	1.276E-02	.5203	7.402E-03
1	77(300)	5.75	4.84	9.0[illegible]E-03	.3497	1.170E-02	.4770	1.129E-02	.4603	6.549E-03
3	252(300)	5.75	4.84	9.0[illegible]E-03	.3497	1.170E-02	.4770	1.129E-02	.4603	6.549E-03
1	77(300)	6.83	5.92	8.202E-03	.3346	1.058E-02	.4314	1.021E-02	.4163	5.923E-03
3	252(300)	6.83	5.92	8.202E-03	.3346	1.058E-02	.4314	1.021E-02	.4163	5.923E-03
1	77(300)	7.88	6.97	7.558E-03	.3082	9.750E-03	.3975	9.410E-03	.3837	5.458E-03
3	252(300)	7.88	6.97	7.558E-03	.3082	9.750E-03	.3975	9.410E-03	.3837	5.458E-03
1	77(300)	8.96	8.04	7.035E-03	.2868	9.076E-03	.3700	8.758E-03	.3571	5.080E-03
3	252(300)	8.96	8.04	7.035E-03	.2868	9.076E-03	.3700	8.758E-03	.3571	5.080E-03
3	252(300)	10.01	9.10	6.615E-03	.2697	8.534E-03	.3480	8.236E-03	.3358	4.777E-03
1	77(300)	10.03	9.12	6.6[illegible]7E-03	.2684	8.523E-03	.3475	8.225E-03	.3353	4.771E-03
1	77(300)	11.08	10.17	6.256E-03	.2551	8.070E-03	.3290	7.788E-03	.3175	4.518E-03
3	252H(300)	11.08	10.17	6.256E-03	.2551	8.070E-03	.3290	7.788E-03	.3175	4.518E-03
1	77H(300)	12.16	11.25	5.9[illegible]9E-03	.2426	7.674E-03	.3129	7.408E-03	.3020	4.296E-03
3	252H(300)	12.16	11.25	5.9[illegible]9E-03	.2426	7.674E-03	.3129	7.406E-03	.3020	4.296E-03
1	77H(300)	13.21	12.3[illegible]	5.6[illegible]4E-03	.2320	7.339E-03	.2992	7.083E-03	.2888	4.108E-03
3	253H(300)	13.21	12.3[illegible]	5.6[illegible]4E-03	.2320	7.339E-03	.2992	7.083E-03	.2888	4.108E-03

41M-R2

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REN	RED
16	11	TRIP				5	.110	.020	1.053E 06	3.710E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	489.7	1312	30.01	-.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
95.5	.051	2.273	3821	6.679E-05	7.68ME-08	2.226E 06	2.453E-02	1.003E-02

ALPHA TOP(T) SIDE(S)	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCAW)	TRAW(TO)	RETA(TO)
	671					
	386	300	91	.0636	2.747E-01	3.1371E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	78(330)	14.29	13.34	5.455E-03	.2224	7.038E-03	.2869	6.792E-03	.2769	3.940E-03
2	2531(330)	14.29	13.34	5.455E-03	.2224	7.038E-03	.2869	6.792E-03	.2769	3.940E-03
1	79(330)	15.36	14.43	5.253E-03	.2142	6.778E-03	.2763	6.540E-03	.2666	3.793E-03
2	2532(330)	15.36	14.43	5.253E-03	.2142	6.778E-03	.2763	6.540E-03	.2666	3.793E-03
1	80(330)	16.41	15.5	5.077E-03	.2066	6.537E-03	.2665	6.304E-03	.2572	3.659E-03
2	2533(330)	16.41	15.5	5.077E-03	.2066	6.537E-03	.2665	6.304E-03	.2572	3.659E-03
1	81(330)	17.46	16.55	4.924E-03	.1999	6.326E-03	.2579	6.105E-03	.2489	3.541E-03
2	2534(330)	17.46	16.55	4.924E-03	.1999	6.326E-03	.2579	6.105E-03	.2489	3.541E-03
1	82(330)	18.54	17.63	4.792E-03	.1937	6.136E-03	.2499	5.916E-03	.2412	3.431E-03
2	2535(330)	18.54	17.63	4.792E-03	.1937	6.136E-03	.2499	5.916E-03	.2412	3.431E-03
1	83(330)	19.59	18.68	4.616E-03	.1882	5.955E-03	.2426	5.747E-03	.2343	3.334E-03
2	2536(330)	19.59	18.68	4.616E-03	.1882	5.955E-03	.2426	5.747E-03	.2343	3.334E-03
1	84(330)	20.67	19.76	4.495E-03	.1830	5.796E-03	.2361	5.588E-03	.2278	3.241E-03
2	2537(330)	20.67	19.76	4.495E-03	.1830	5.796E-03	.2361	5.588E-03	.2278	3.241E-03
1	85(330)	21.72	20.81	4.374E-03	.1783	5.642E-03	.2300	5.445E-03	.2220	3.159E-03
2	2538(330)	21.72	20.81	4.374E-03	.1783	5.642E-03	.2300	5.445E-03	.2220	3.159E-03
1	86(330)	22.80	21.89	4.254E-03	.1733	5.502E-03	.2243	5.310E-03	.2165	3.080E-03
2	2539(330)	22.80	21.89	4.254E-03	.1733	5.502E-03	.2243	5.310E-03	.2165	3.080E-03
1	87(330)	23.85	22.94	4.166E-03	.1699	5.376E-03	.2191	5.187E-03	.2115	3.009E-03
2	2540(330)	23.85	22.94	4.166E-03	.1699	5.376E-03	.2191	5.187E-03	.2115	3.009E-03
1	88(330)	24.92	24.01	4.072E-03	.1660	5.252E-03	.2142	5.069E-03	.2067	2.940E-03
2	2541(330)	24.92	24.01	4.072E-03	.1660	5.252E-03	.2142	5.069E-03	.2067	2.940E-03
1	89(330)	25.97	25.06	3.965E-03	.1625	5.141E-03	.2096	4.962E-03	.2023	2.878E-03
2	2542(330)	25.97	25.06	3.965E-03	.1625	5.141E-03	.2096	4.962E-03	.2023	2.878E-03
1	90(330)	27.05	26.14	3.912E-03	.1591	5.034E-03	.2053	4.858E-03	.1981	2.818E-03
2	2543(330)	27.05	26.14	3.912E-03	.1591	5.034E-03	.2053	4.858E-03	.1981	2.818E-03

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V41R-82A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

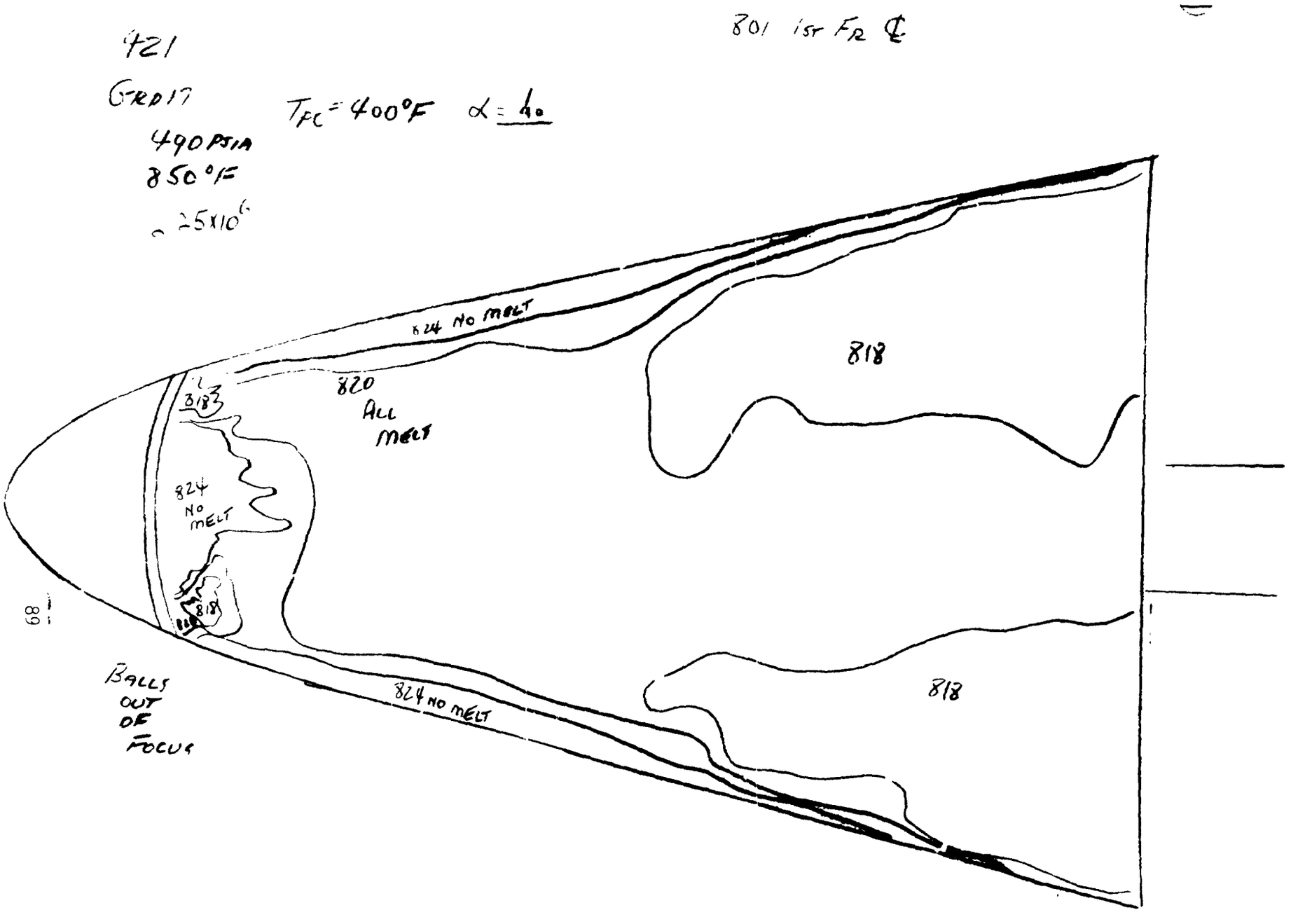
GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REB	RED
15	11	TRIM				5	.110	.020	1.053E 06	3.710E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	489.7	1312	30.01	-.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	DTREF (R= .040 FT)
95.5	.051	2.273	3821	4.675E-05	7.6888E-08	2.226E 05	2.453E-02	1.003E-02

CAPERA	HOLE NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCKCKR)	TRAN(TO)	BETA(TO)
TOP(T)	421					
SIDE(S)	386	300	91	.0636	2.747E-01	3.1371E-01
BG						

	PIC NO	TIME (SECS)	ELTIME	H(TO)	H(TO)/HREF	H(.9TC)	H(.9TC)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	793(350)	24.10	27.19	3.826E-03	.1560	4.936E-03	.2012	4.764E-03	.1942	2.763E-03
5	2546(300)	24.10	27.19	3.826E-03	.1560	4.936E-03	.2012	4.764E-03	.1942	2.763E-03
		24.23		MODEL HAS LEFT CENTERLINE						
1	794(350)	24.18	27.27	3.735E-03	.1530	4.841E-03	.1974	4.672E-03	.1905	2.710E-03
5	2547(300)	24.18	27.27	3.735E-03	.1530	4.841E-03	.1974	4.672E-03	.1905	2.710E-03
1	795(350)	24.23	27.32	3.675E-03	.1502	4.753E-03	.1938	4.587E-03	.1870	2.661E-03
5	2548(300)	24.23	27.32	3.675E-03	.1502	4.753E-03	.1938	4.587E-03	.1870	2.661E-03


421
GRD17
490 PSIA
850 °F
.25x10^6
T_{FC} = 400°F α = 40
801 1st Fr ℄
824 NO MELT
818
820
ALL
MELT
818
824
NO
MELT
818
818
BALLS
OUT
OF
FOCUS
824 NO MELT

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REU
17	11	TRIP				S	.110	.070	1.064E 06	3.740E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	450.7	1305	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SIREF (H= .040 FT)
95.0	.051	2.277	4811	4.513E-05	7.667E-08	2.249E 06	2.453E-02	1.795E-02

CAPSA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACA)	TRAN(TO)	BETA(TO)
TOP(T)	421					
SIDE(S)	386	400	77	.0060	4.131E-01	5.5856E-01
BG						

PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1 79H(400)	1.50		MODEL HAS NOT REACHED CENTERLINE						
2 2549(400)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 1.65									
1 79H(400)	2.57	1.05	2.8.2E-02	1.1707	3.941E-02	1.6047	3.696E-02	1.4252	2.054E-02
2 2551(400)	2.57	1.05	2.8.2E-02	1.1707	3.941E-02	1.6047	3.696E-02	1.4252	2.054E-02
1 80H(400)	3.62	2.70	2.246E-02	.9168	3.074E-02	1.2564	2.732E-02	1.1137	1.605E-02
2 2551(400)	3.62	2.70	2.246E-02	.9169	3.074E-02	1.2564	2.732E-02	1.1137	1.605E-02
BG		3.67							
1 81H(400)	4.70	3.78	1.847E-02	.7735	2.604E-02	1.0615	2.310E-02	.9416	1.357E-02
2 2552(400)	4.70	3.78	1.847E-02	.7735	2.604E-02	1.0615	2.310E-02	.9416	1.357E-02
1 82H(400)	5.78	4.85	1.674E-02	.6823	2.297E-02	.9364	2.037E-02	.8307	1.197E-02
2 2553(400)	5.78	4.85	1.674E-02	.6823	2.297E-02	.9364	2.037E-02	.8307	1.197E-02
1 83H(400)	6.83	5.90	1.517E-02	.6186	2.082E-02	.8490	1.847E-02	.7531	1.085E-02
2 2554(400)	6.83	5.90	1.517E-02	.6186	2.082E-02	.8490	1.847E-02	.7531	1.085E-02
1 84H(400)	7.90	6.96	1.345E-02	.5489	1.915E-02	.7808	1.694E-02	.6926	9.980E-03
2 2555(400)	7.90	6.96	1.345E-02	.5489	1.915E-02	.7808	1.694E-02	.6926	9.980E-03
1 85H(400)	8.95	8.03	1.316E-02	.5306	1.785E-02	.7279	1.584E-02	.6457	9.303E-03
2 2556(400)	8.95	8.03	1.316E-02	.5306	1.785E-02	.7279	1.584E-02	.6457	9.303E-03
1 86H(400)	10.03	9.11	1.222E-02	.4980	1.677E-02	.6835	1.487E-02	.6063	8.736E-03
2 2557(400)	10.03	9.11	1.222E-02	.4980	1.677E-02	.6835	1.487E-02	.6063	8.736E-03
1 87H(400)	11.08	10.16	1.157E-02	.4716	1.587E-02	.6472	1.408E-02	.5741	8.272E-03
2 2558(400)	11.08	10.16	1.157E-02	.4716	1.587E-02	.6472	1.408E-02	.5741	8.272E-03
1 88H(400)	12.16	11.23	1.100E-02	.4484	1.509E-02	.6154	1.339E-02	.5459	7.866E-03
2 2559(400)	12.16	11.23	1.100E-02	.4484	1.509E-02	.6154	1.339E-02	.5459	7.866E-03
1 89H(400)	13.21	12.29	1.052E-02	.4288	1.443E-02	.5885	1.280E-02	.5220	7.522E-03
2 2560(400)	13.21	12.29	1.052E-02	.4288	1.443E-02	.5885	1.280E-02	.5220	7.522E-03

RNCOF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	NED
17	11	TRIP				5	.110	.020	1.064E 06	3.748E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	490.7	1305	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	SREF	SIREF
95.0	.051	2.277	3811	4.513E-05	7.647E-08	2.749E 06	2.453E-32 (RE .040 FT)	1.795E-02 (RE .040 FT)

LAMBDA (DEG)	ROLL NO	PLATE TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGAK)	TRANS(TO)	BETA(TO)
	.21					
SIDE(S)	.285	400	87	.0060	4.131E-01	5.5050E-01
56						

	PTC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.93TO)	H(.93TO)/HREF	ST(TO)
1	61 (400)	14.69	14.36	1.006E-02	.4112	1.384E-02	.5643	1.228E-02	.5005	7.212E-03
5	2561(400)	14.69	13.34	1.006E-02	.4112	1.384E-02	.5643	1.228E-02	.5005	7.212E-03
1	611(400)	15.24	14.41	9.710E-03	.3959	1.333E-02	.5433	1.182E-02	.4819	6.944E-03
5	2562(400)	15.24	14.41	9.710E-03	.3959	1.333E-02	.5433	1.182E-02	.4819	6.944E-03
1	612(400)	16.41	15.45	9.367E-03	.3819	1.286E-02	.5241	1.140E-02	.4649	6.699E-03
5	2563(400)	16.41	15.45	9.367E-03	.3819	1.286E-02	.5241	1.140E-02	.4649	6.699E-03
1	613(400)	17.59	16.57	9.025E-03	.3693	1.243E-02	.5066	1.103E-02	.4495	6.478E-03
5	2564(400)	17.59	16.57	9.025E-03	.3693	1.243E-02	.5066	1.103E-02	.4495	6.478E-03
1	614(400)	18.54	17.62	8.738E-03	.3581	1.205E-02	.4914	1.069E-02	.4359	6.281E-03
5	2565(400)	18.54	17.62	8.738E-03	.3581	1.205E-02	.4914	1.069E-02	.4359	6.281E-03
1	615(400)	19.62	18.69	8.527E-03	.3476	1.170E-02	.4771	1.038E-02	.4232	6.098E-03
5	2566(400)	19.62	18.	8.527E-03	.3476	1.170E-02	.4771	1.038E-02	.4232	6.098E-03
1	616(400)	20.69	19.	8.241E-03	.3380	1.138E-02	.4639	1.009E-02	.4115	5.930E-03
5	2567(400)	20.69	19.77	8.241E-03	.3380	1.138E-02	.4639	1.009E-02	.4115	5.930E-03
1	617(400)	21.74	20.82	8.079E-03	.3296	1.109E-02	.4520	9.836E-03	.4010	5.778E-03
5	2568(400)	21.74	20.82	8.079E-03	.3296	1.109E-02	.4520	9.836E-03	.4010	5.778E-03
1	618(400)	22.82	21.90	7.878E-03	.3212	1.081E-02	.4408	9.591E-03	.3910	5.634E-03
5	2569(400)	22.82	21.90	7.878E-03	.3212	1.081E-02	.4408	9.591E-03	.3910	5.634E-03
1	619(400)	23.87	22.95	7.698E-03	.3137	1.056E-02	.4306	9.369E-03	.3819	5.504E-03
5	2570(400)	23.87	22.95	7.698E-03	.3137	1.056E-02	.4306	9.369E-03	.3819	5.504E-03
1	620(400)	24.95	24.02	7.521E-03	.3066	1.032E-02	.4208	9.156E-03	.3733	5.379E-03
5	2571(400)	24.95	24.02	7.521E-03	.3066	1.032E-02	.4208	9.156E-03	.3733	5.379E-03
1	621(400)	26.00	25.07	7.362E-03	.3001	1.010E-02	.4119	8.962E-03	.3654	5.265E-03
5	2572(400)	26.00	25.07	7.362E-03	.3001	1.010E-02	.4119	8.962E-03	.3654	5.265E-03
1	622(400)	27.08	26.15	7.224E-03	.2939	9.893E-03	.4033	8.776E-03	.3578	5.155E-03
5	2573(400)	27.08	26.15	7.224E-03	.2939	9.893E-03	.4033	8.776E-03	.3578	5.155E-03

VAIH-R28

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

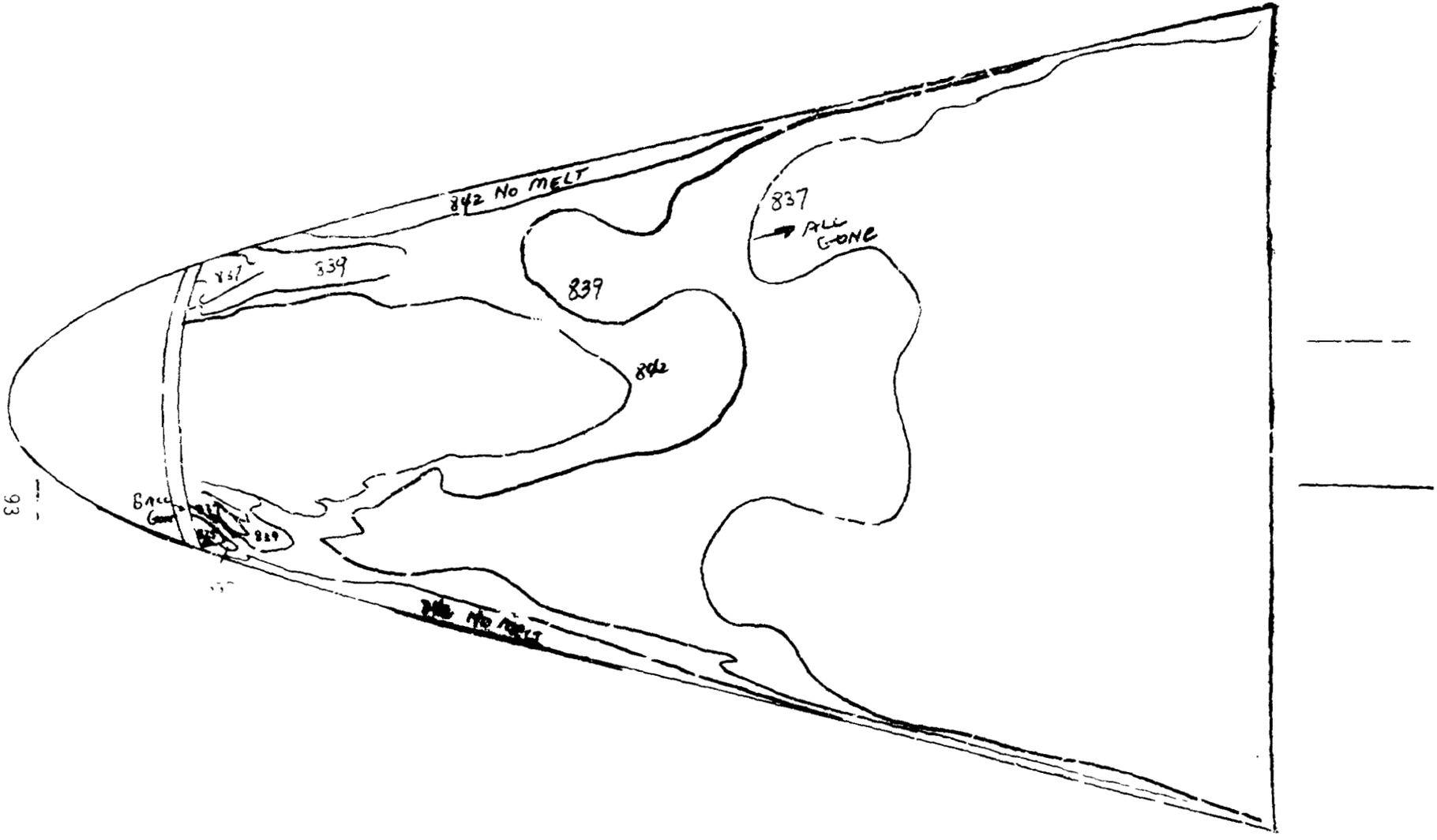
GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
17	11	TRIP				S	.110	.020	1.064E 06	3.748E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	450.7	1305	29.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	BTREF (RE .048 FT)
95.0	.051	2.277	3011	4.513E-05	7.647E-08	2.249E 06	2.453E-02	1.795E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
106(T)	421					
3ICE(S)	386	400	87	.0660	4.131E-01	5.585E-01
36						

	PIC NO	TIME (SECTIVE 27.55		H(TO) MODEL HAS LEFT CENTERLINE	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	423(400)	27.13	27.25	7.08E-03	.2882	9.700E-03	.3965	8.605E-03	.3508	5.055E-03
2	257(400)	27.13	27.23	7.08E-03	.2882	9.700E-03	.3965	8.605E-03	.3508	5.055E-03
1	424(400)	27.20	27.23	6.92E-03	.2825	9.514E-03	.3879	8.434E-03	.3441	4.958E-03
2	257(400)	27.20	27.23	6.92E-03	.2826	9.514E-03	.3879	8.434E-03	.3441	4.958E-03


TRD 18
75 PSIA
855°F
T_{PC} = 300 °F
α = 40°
830 lsi
842 NO MELT
837
ALL GONE
839
842
839
842
839
842 NO MELT

WNCHP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
1P	11	TRIP				5	.110	.020	0.243E 05	2.904E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SPECTCH	ALPHA-PREFRENU	ROLL-MODEL	YAW
7.97	375.2	1296	34.96	-0.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SREF (RE .040 FT)
96.6	.049	1.751	3796	3.694E-05	7.614E-06	1.743E 06	2.148E-02	2.039E-02

CAPPHA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (PHCACAK)	TRAN(TO)	DETA(TO)
	421					
>ICE(S)	386	800	96	.0634	2.053E-01	3.2962E-01

>G

	PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	P27(300)	1.50	MODEL WAS NOT REACHED CENTERLINE						
>	257E(300)	1.50	MODEL WAS NOT REACHED CENTERLINE						
INJECT TIME = 1.02									
1	P28(300)	2.55 1.04	1.03HE-02	.7626	2.123E-02	.9881	1.929E-02	.8970	1.527E-02
>	257(300)	2.55 1.04	1.03HE-02	.7626	2.123E-02	.9881	1.929E-02	.8970	1.527E-02
1	P29(300)	3.62 2.71	1.273E-02	.5924	1.669E-02	.7675	1.49HE-02	.6974	1.186E-02
>	258(300)	3.62 2.71	1.273E-02	.5924	1.649E-02	.7675	1.49HE-02	.6974	1.186E-02
>G		3.49							
1	P30(300)	4.67 3.74	1.0HOE-02	.5020	1.408E-02	.6516	1.272E-02	.5020	1.007E-02
>	259(300)	4.67 3.74	1.0HOE-02	.5020	1.408E-02	.6516	1.272E-02	.5020	1.007E-02
1	P31(300)	5.75 4.86	5.52HE-03	.4435	1.235E-02	.5744	1.122E-02	.5221	8.883E-03
>	258(300)	5.75 4.86	5.52HE-03	.4435	1.235E-02	.5744	1.122E-02	.5221	8.883E-03
1	P32(300)	6.80 5.89	6.037E-03	.4020	1.119E-02	.5208	1.017E-02	.4732	8.092E-03
>	259(300)	6.80 5.89	6.037E-03	.4020	1.119E-02	.5208	1.017E-02	.4732	8.092E-03
1	P33(300)	7.88 6.97	7.962E-03	.3696	1.029E-02	.4789	9.369E-03	.4352	7.406E-03
>	260(300)	7.88 6.97	7.962E-03	.3696	1.029E-02	.4789	9.369E-03	.4352	7.406E-03
1	P34(300)	8.95 8.04	7.371E-03	.3440	9.576E-03	.4457	8.701E-03	.4050	6.891E-03
>	259(300)	8.95 8.04	7.371E-03	.3440	9.576E-03	.4457	8.701E-03	.4050	6.891E-03
1	P35(300)	10.01 9.12	6.951E-03	.3235	9.006E-03	.4192	8.183E-03	.3809	6.480E-03
>	260(300)	10.01 9.12	6.951E-03	.3235	9.006E-03	.4192	8.183E-03	.3809	6.480E-03
1	P36(300)	11.08 10.17	6.573E-03	.3059	8.514E-03	.3964	7.734E-03	.3602	6.128E-03
>	259(300)	11.08 10.17	6.573E-03	.3059	8.514E-03	.3964	7.734E-03	.3602	6.128E-03
1	P37(300)	12.16 11.25	6.251E-03	.2909	8.094E-03	.3769	7.354E-03	.3425	5.827E-03
>	260(300)	12.16 11.25	6.251E-03	.2909	8.094E-03	.3769	7.354E-03	.3425	5.827E-03
1	P38(300)	13.21 12.33	5.978E-03	.2782	7.745E-03	.3605	7.037E-03	.3276	5.573E-03
>	259(300)	13.21 12.33	5.978E-03	.2782	7.745E-03	.3605	7.037E-03	.3276	5.573E-03

V41R-02A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REF	NED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
1A	11	TRIP				5	.110	.020	8.243E 05	2.904E 03

MACH NO	PO(PSIA)	TO(DEG K)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	375.2	1256	30.96	-9.96	30.00	0	0

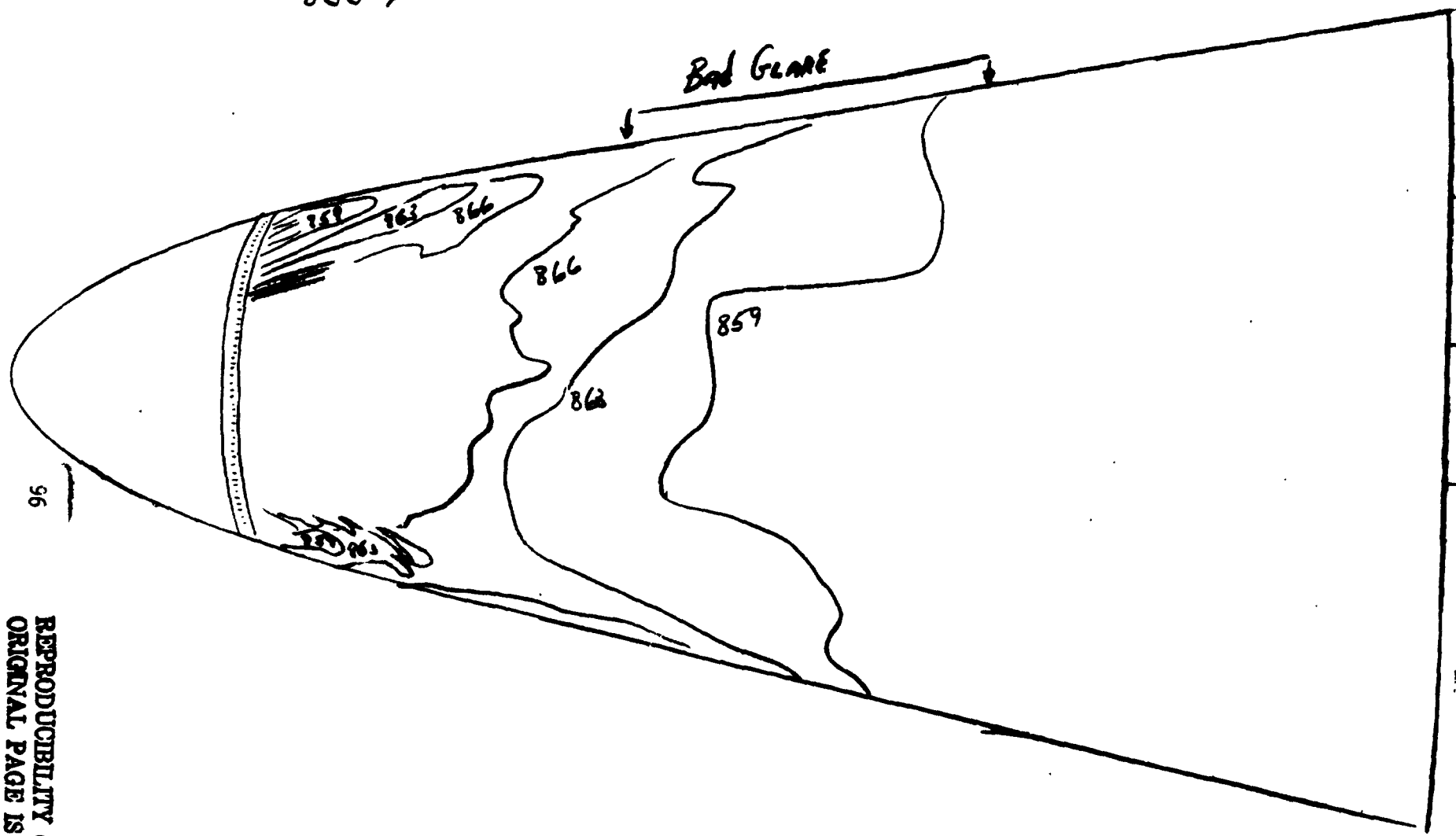
T-INF (DEG K)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (WE .040 FT)	SINEF (WE .040 FT)
96.6	.044	1.7-1	3794	3.694E-05	7.619E-06	1.763E 06	2.148E-02	2.039E-02

CAPFEA	WALL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WMCACAR)	TRANI(TO)	HETA(TO)
IDF(I)	621					
SILF(S)	384	300	NA	.0636	2.853E-01	3.2962E-01
SG						

	PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.91TO)	H(.91TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	8391(300)	14.29	13.32	5.732E-03	.2668	7.427E-03	.3457	6.746E-03	.3141	5.344E-03
5	2591(300)	14.29	13.32	5.732E-03	.2668	7.427E-03	.3457	6.746E-03	.3141	5.344E-03
1	8401(300)	15.34	14.43	5.519E-03	.2569	7.151E-03	.3329	6.498E-03	.3024	5.145E-03
5	2591(300)	15.34	14.43	5.519E-03	.2569	7.151E-03	.3329	6.498E-03	.3024	5.145E-03
1	8411(300)	16.41	15.51	5.326E-03	.2478	6.898E-03	.3211	6.268E-03	.2917	4.984E-03
5	2592(300)	16.41	15.51	5.326E-03	.2478	6.898E-03	.3211	6.268E-03	.2917	4.984E-03
1	8421(300)	17.46	16.56	5.125E-03	.2384	6.676E-03	.3107	6.066E-03	.2823	4.803E-03
5	2593(300)	17.49	16.56	5.125E-03	.2384	6.676E-03	.3107	6.066E-03	.2823	4.803E-03
1	8431(300)	18.56	17.63	4.943E-03	.2324	6.469E-03	.3011	5.878E-03	.2736	4.655E-03
5	2594(300)	18.56	17.63	4.943E-03	.2324	6.469E-03	.3011	5.878E-03	.2736	4.655E-03
		19.27		MODEL HAS LEFT CENTERLINE						
1	8441(300)	19.62	18.71	4.676E-03	.2256	6.208E-03	.2923	5.708E-03	.2656	4.519E-03
5	2595(300)	19.62	18.71	4.676E-03	.2256	6.208E-03	.2923	5.708E-03	.2656	4.519E-03
1	8451(300)	20.67	19.74	4.716E-03	.2195	6.111E-03	.2866	5.552E-03	.2586	4.397E-03
5	2596(300)	20.67	19.74	4.716E-03	.2195	6.111E-03	.2866	5.552E-03	.2586	4.397E-03
1	8461(300)	21.74	20.83	4.543E-03	.2138	5.951E-03	.2770	5.407E-03	.2517	4.282E-03
5	2597(300)	21.74	20.83	4.543E-03	.2138	5.951E-03	.2770	5.407E-03	.2517	4.282E-03
1	8471(300)	22.77	21.86	4.446E-03	.2087	5.809E-03	.2704	5.278E-03	.2457	4.188E-03
5	2598(300)	22.77	21.86	4.446E-03	.2087	5.809E-03	.2704	5.278E-03	.2457	4.188E-03

853 1st Fr ℄

421
GRP 19 $T_{PC} = 300°F$ $\alpha = 30°$
375 PSIA
835°F



R41H-R2A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	A/L	DIA.	REG	REG
19	11	TRIP				5	.110	.031	0.350E 05	4.500E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.47	375.2	1285	29.95	.05	30.06	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH= .040 FT)	DIREF (RH= .040 FT)
95.8	.039	1.751	3782	3.524E-05	7.594E-08	1.765E 06	2.145E-02	2.029E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
	621					
>IDE(S)	380	250	85	.0617	2.238E-01	2.411OE-01

>G

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/RHREF	H(.01C)	H(.01C)/RHREF	H(.012TO)	H(.012TO)/RHREF	ST(TO)
				MODEL HAS NOT REACHED CENTERLINE						
>	2601(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.00							
>	2402(250)	2.55	1.05	1.1[illegible]E-02	.5396	1.672E-02	.6860	1.024E-02	.6639	1.070E-02
>	2403(250)	3.02	2.73	9.0[illegible]E-03	.4199	1.145E-02	.5338	1.10[illegible]E-02	.5165	8.389E-03
>G			3.07							
>	2604(250)	4.70	3.[illegible]	7.0[illegible]E-03	.3555	9.697E-03	.4520	9.383E-03	.4374	7.104E-03
>	2605(250)	5.75	4.85	6.7[illegible]1E-03	.3147	8.583E-03	.4001	8.306E-03	.3872	6.208E-03
>	2606(250)	6.03	5.93	6.1[illegible]E-03	.2847	7.765E-03	.3620	7.514E-03	.3503	5.009E-03
>	2607(250)	7.28	6.98	5.630E-03	.2624	7.157E-03	.3336	6.926E-03	.3228	5.243E-03
>	2608(250)	8.65	8.05	5.2[illegible]E-03	.2443	6.662E-03	.3105	6.447E-03	.3005	4.880E-03
>	2609(250)	10.03	9.13	4.922E-03	.2294	6.257E-03	.2917	6.055E-03	.2822	4.586E-03
>	2610(250)	11.08	10.13	4.661E-03	.2173	5.925E-03	.2762	5.734E-03	.2673	4.341E-03
>	2611(250)	12.16	11.24	4.433E-03	.2066	5.635E-03	.2627	5.453E-03	.2542	4.128E-03
>	2612(250)	13.23	12.34	4.2[illegible]5E-03	.1976	5.3[illegible]6E-03	.2512	5.215E-03	.2431	3.948E-03

WHCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
10	11	TRIP				5	.110	.031	8.350E 05	4.390E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA TRENEND	ROLL-MODEL	YAW
7.97	375.2	1285	29.95	.05	30.00	0	0

T-INF (DEG R.)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	SINEF (RE .060 FT)
93.0	.079	1.751	3782	3.524E-05	7.549E-07	1.745E 06	2.145E-02	2.029E-02

CAPFLA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUACRA)	TRAN(TO)	BETA(TO)
(0+(1)	421					
>ICE(5)	386	250	85	.0917	2.230E-01	2.4110E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	P62(250)	14.29	13.39	4.065E-03	.1845	5.164E-03	.2409	5.001E-03	.2331	3.786E-03
>	2613(250)	14.29	13.39	4.065E-03	.1845	5.164E-03	.2409	5.001E-03	.2331	3.786E-03
1	P63(250)	15.34	14.47	3.911E-03	.1823	4.972E-03	.2318	4.812E-03	.2243	3.643E-03
>	2614(250)	15.34	14.47	3.911E-03	.1823	4.972E-03	.2318	4.812E-03	.2243	3.643E-03
1	P64(250)	16.41	15.52	3.775E-03	.1760	4.801E-03	.2238	4.644E-03	.2166	3.517E-03
>	2615(250)	16.41	15.52	3.775E-03	.1760	4.801E-03	.2238	4.644E-03	.2166	3.517E-03
1	P65(250)	17.49	16.59	3.652E-03	.1702	4.642E-03	.2164	4.493E-03	.2094	3.401E-03
>	2616(250)	17.49	16.59	3.652E-03	.1702	4.642E-03	.2164	4.493E-03	.2094	3.401E-03
1	P66(250)	18.56	17.64	3.541E-03	.1651	4.502E-03	.2099	4.357E-03	.2031	3.298E-03
>	2617(250)	18.56	17.64	3.541E-03	.1651	4.502E-03	.2099	4.357E-03	.2031	3.298E-03
1	P67(250)	19.62	18.72	3.443E-03	.1603	4.371E-03	.2037	4.230E-03	.1972	3.202E-03
>	2618(250)	19.62	18.72	3.443E-03	.1603	4.371E-03	.2037	4.230E-03	.1972	3.202E-03
1	P68(250)	20.67	19.77	3.365E-03	.1559	4.253E-03	.1982	4.116E-03	.1918	3.116E-03
>	2619(250)	20.67	19.77	3.365E-03	.1559	4.253E-03	.1982	4.116E-03	.1918	3.116E-03
1	P69(250)	21.74	20.85	3.298E-03	.1519	4.142E-03	.1931	4.008E-03	.1868	3.034E-03
>	2620(250)	21.74	20.85	3.298E-03	.1519	4.142E-03	.1931	4.008E-03	.1868	3.034E-03
1	P70(250)	22.82	21.92	3.177E-03	.1461	4.039E-03	.1883	3.908E-03	.1822	2.959E-03
>	2621(250)	22.82	21.92	3.177E-03	.1461	4.039E-03	.1883	3.908E-03	.1822	2.959E-03
		22.87		MODEL HAS LEFT CENTERLINE						
1	P71(250)	23.87	22.98	3.103E-03	.1447	3.945E-03	.1839	3.816E-03	.1780	2.890E-03
>	2622(250)	23.87	22.98	3.103E-03	.1447	3.945E-03	.1839	3.816E-03	.1780	2.890E-03
1	P72(250)	24.95	24.05	3.033E-03	.1414	3.856E-03	.1797	3.732E-03	.1739	2.825E-03
>	2623(250)	24.95	24.05	3.033E-03	.1414	3.856E-03	.1797	3.732E-03	.1739	2.825E-03

421

GP20

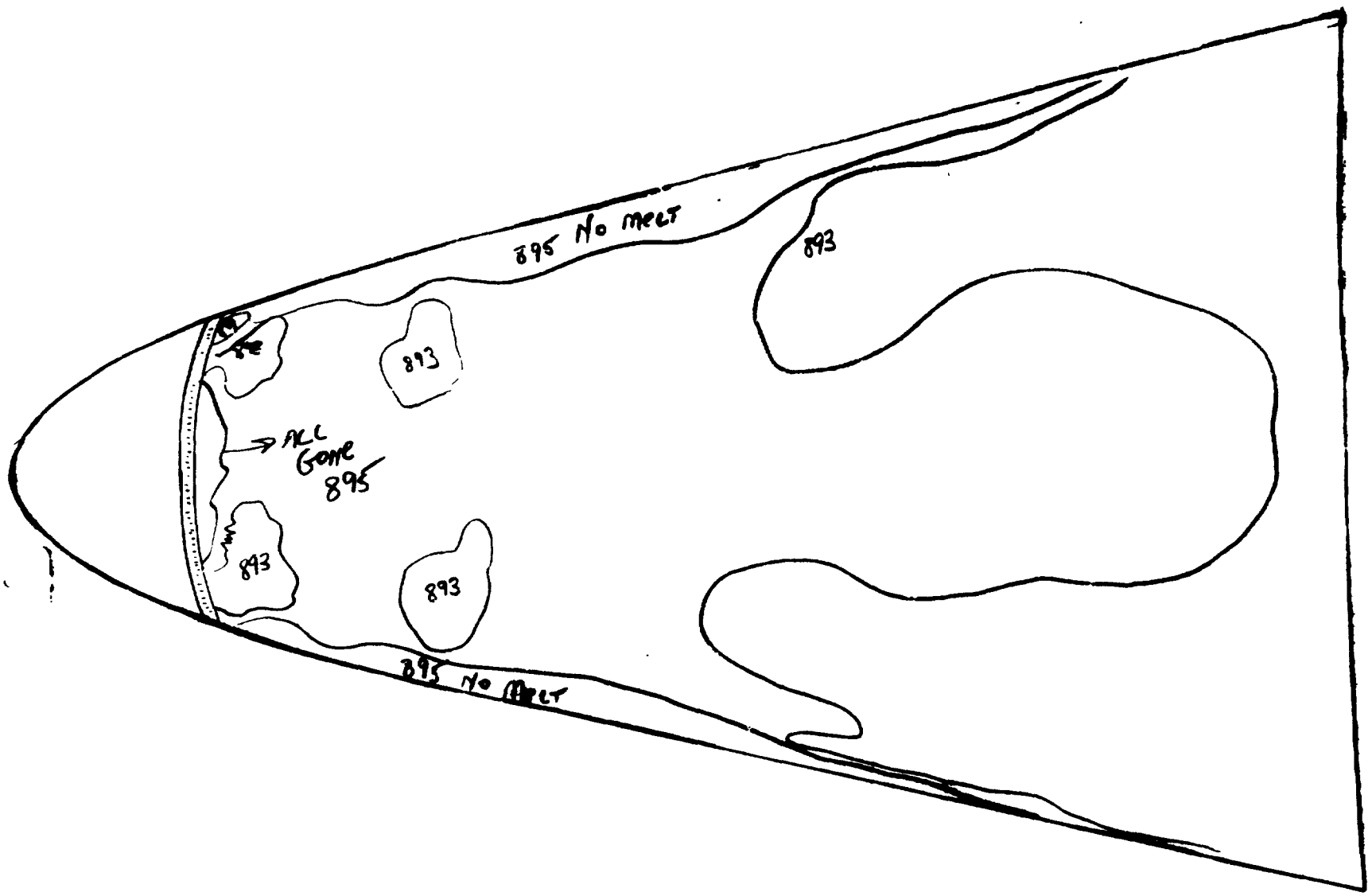
$T_{PC} = 350\,°F$

375 PSIA

835 °F

878 1st FRC

$\alpha = 40°$



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V419-H2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

RCDF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REB
20	11	TRIP				5	.110	.031	0.392E 05	4.570E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	376.4	1265	39.95	-9.95	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH= .040 FT)	SIREF (RH= .040 FT)
93.8	.040	1.746	4782	3.538E-05	7.551E-08	1.772E 06	2.150E-02	2.025E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMDACAR)	TRAN(TO)	BETA(TO)
10F(T)	021					
51CE(S)	386	350	86	.0652	3.508E-01	4.5196E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	P75(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
3	2626(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.65							
1	P76(350)	2.57	1.06	2.245E-02	1.0677	3.069E-02	1.4275	2.753E-02	1.2806	2.110E-02
3	2627(350)	2.57	1.65	2.245E-02	1.0677	3.069E-02	1.4275	2.753E-02	1.2806	2.110E-02
1	P77(350)	3.62	2.71	1.746E-02	.8302	2.398E-02	1.1154	2.151E-02	1.0006	1.655E-02
3	2628(350)	3.62	2.71	1.746E-02	.8302	2.398E-02	1.1154	2.151E-02	1.0006	1.655E-02
3G			3.96							
1	P78(350)	4.70	3.79	1.517E-02	.7054	2.028E-02	.9431	1.814E-02	.8461	1.399E-02
3	2629(350)	4.70	3.79	1.517E-02	.7054	2.028E-02	.9431	1.814E-02	.8461	1.399E-02
1	P79(350)	5.75	4.83	1.341E-02	.6239	1.793E-02	.8341	1.609E-02	.7483	1.237E-02
3	2630(350)	5.75	4.83	1.341E-02	.6239	1.793E-02	.8341	1.609E-02	.7483	1.237E-02
1	P80(350)	6.83	5.90	1.213E-02	.5641	1.622E-02	.7543	1.455E-02	.6766	1.119E-02
3	2631(350)	6.83	5.90	1.213E-02	.5641	1.622E-02	.7543	1.455E-02	.6766	1.119E-02
1	P81(350)	7.90	6.98	1.115E-02	.5188	1.491E-02	.6937	1.338E-02	.6223	1.029E-02
3	2632(350)	7.90	6.98	1.115E-02	.5188	1.491E-02	.6937	1.338E-02	.6223	1.029E-02
1	P82(350)	8.95	8.03	1.040E-02	.4837	1.390E-02	.6467	1.247E-02	.5801	9.593E-03
3	2633(350)	8.95	8.03	1.040E-02	.4837	1.390E-02	.6467	1.247E-02	.5801	9.593E-03
1	P83(350)	10.03	9.11	9.765E-03	.4542	1.306E-02	.6073	1.171E-02	.5448	9.008E-03
3	2634(350)	10.03	9.11	9.765E-03	.4542	1.306E-02	.6073	1.171E-02	.5448	9.008E-03
1	P84(350)	11.08	10.16	9.268E-03	.4310	1.236E-02	.5750	1.109E-02	.5158	8.529E-03
3	2635(350)	11.08	10.16	9.268E-03	.4310	1.236E-02	.5750	1.109E-02	.5158	8.529E-03
1	P85(350)	12.16	11.23	8.742E-03	.4069	1.175E-02	.5468	1.054E-02	.4905	8.110E-03
3	2636(350)	12.16	11.23	8.742E-03	.4069	1.175E-02	.5468	1.054E-02	.4905	8.110E-03
1	P86(350)	13.23	12.31	8.349E-03	.3906	1.123E-02	.5223	1.007E-02	.4685	7.748E-03
3	2637(350)	13.23	12.31	8.349E-03	.3906	1.123E-02	.5223	1.007E-02	.4685	7.748E-03

100

NASA-HI OH 56

V41B-A2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

10- 8-74 PAGE 2

WHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
20	11	TRIM				5	.110	.091	8.302E 05	4.570E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	376.8	1285	39.95	-9.95	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	SIREF (RE .040 FT)
93.8	.040	1.755	3782	3.539E-05	7.551E-08	1.772E 06	2.150E-02	2.025E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAR)	TRAN(TO)	BETA(TO)
10F(T)	421					
5ICE(S)	386	850	94	.0652	3.588E-01	4.5196E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	887(350)	14.28	13.36	8.061E-03	.3750	1.078E-02	.5013	9.669E-03	.4497	7.437E-03
5	2638(350)	14.28	13.36	8.061E-03	.3750	1.078E-02	.5013	9.669E-03	.4497	7.437E-03
1	888(350)	15.36	14.44	7.755E-03	.3607	1.037E-02	.4823	9.302E-03	.4326	7.154E-03
5	2639(350)	15.36	14.44	7.755E-03	.3607	1.037E-02	.4823	9.302E-03	.4326	7.154E-03
1	889(350)	16.41	15.49	7.487E-03	.3483	1.001E-02	.4656	8.980E-03	.4177	6.907E-03
5	2640(350)	16.41	15.49	7.487E-03	.3483	1.001E-02	.4656	8.980E-03	.4177	6.907E-03
1	890(350)	17.49	16.57	7.205E-03	.3369	9.688E-03	.4503	8.686E-03	.4039	6.679E-03
5	2641(350)	17.49	16.57	7.205E-03	.3369	9.688E-03	.4503	8.686E-03	.4039	6.679E-03
1	891(350)	18.57	17.64	7.018E-03	.3283	9.368E-03	.4363	8.415E-03	.3914	6.472E-03
5	2642(350)	18.57	17.64	7.018E-03	.3283	9.368E-03	.4363	8.415E-03	.3914	6.472E-03
1	892(350)	19.62	18.69	6.816E-03	.3170	9.113E-03	.4239	8.175E-03	.3802	6.287E-03
5	2643(350)	19.62	18.69	6.816E-03	.3170	9.113E-03	.4239	8.175E-03	.3802	6.287E-03
1	893(350)	20.69	19.77	6.626E-03	.3083	8.861E-03	.4122	7.946E-03	.3697	6.114E-03
5	2644(350)	20.69	19.77	6.626E-03	.3083	8.861E-03	.4122	7.946E-03	.3697	6.114E-03
1	894(350)	21.74	20.82	6.458E-03	.3004	8.635E-03	.4016	7.746E-03	.3603	5.958E-03
5	2645(350)	21.74	20.82	6.458E-03	.3004	8.635E-03	.4016	7.746E-03	.3603	5.958E-03
1	895(350)	22.82	21.90	6.297E-03	.2929	8.420E-03	.3916	7.553E-03	.3513	5.809E-03
5	2646(350)	22.82	21.90	6.297E-03	.2929	8.420E-03	.3916	7.553E-03	.3513	5.809E-03
		23.72		MODEL HAS LEFT CENTERLINE						
1	896(350)	23.87	22.95	6.151E-03	.2861	8.225E-03	.3826	7.378E-03	.3432	5.675E-03
5	2647(350)	23.87	22.95	6.151E-03	.2861	8.225E-03	.3826	7.378E-03	.3432	5.675E-03
1	897(350)	24.55	24.02	6.012E-03	.2796	8.038E-03	.3739	7.211E-03	.3354	5.546E-03
5	2648(350)	24.55	24.02	6.012E-03	.2796	8.038E-03	.3739	7.211E-03	.3354	5.546E-03

421

Gp21

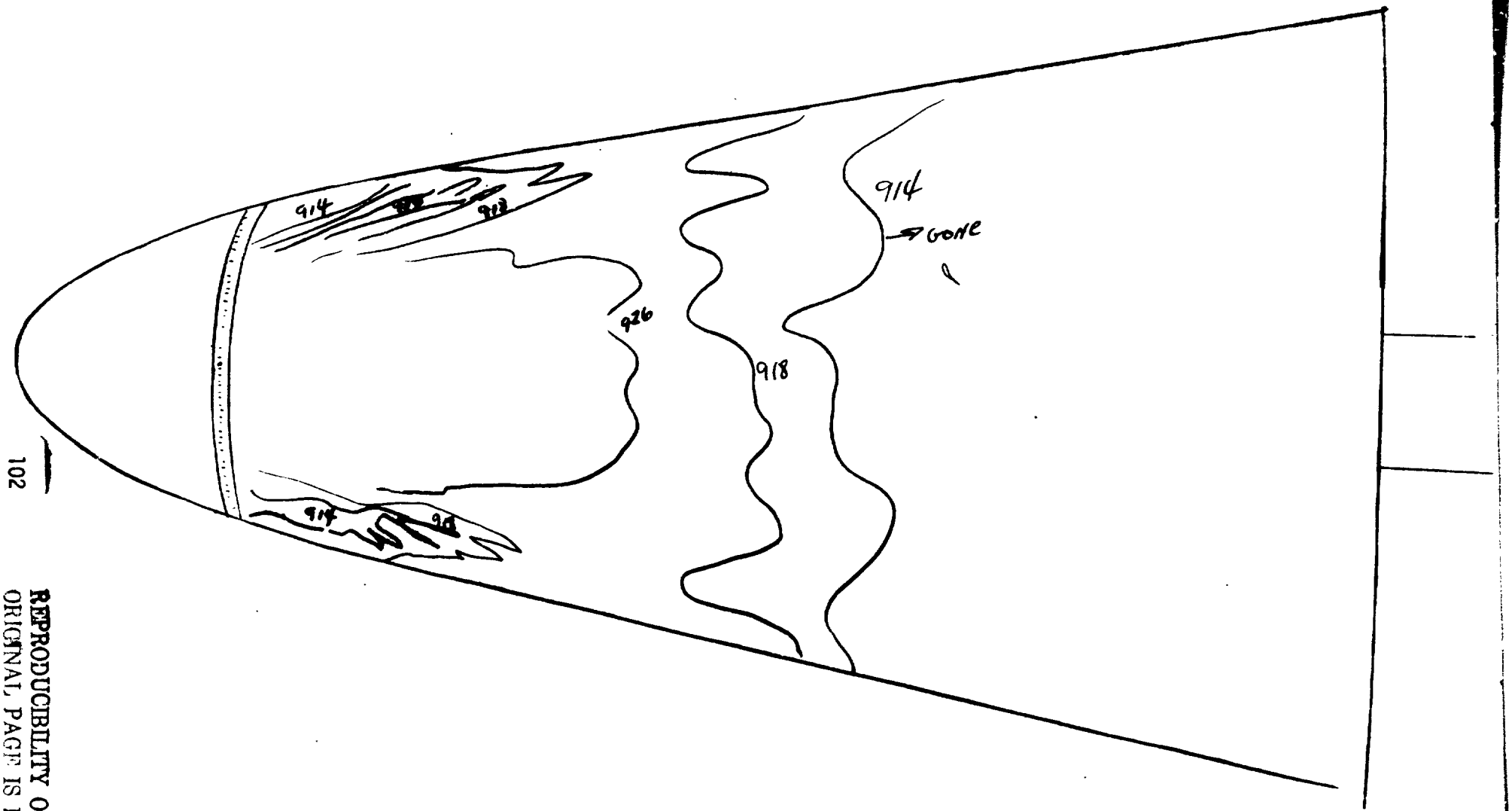
265 PSIA

820°F

T_{PC} = 250°F

$\alpha = 30°$

903 1st Fr ℄



NASA-HI OF 54

V41H-R2A

AEDC(ARO,INC., ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GROUP CONFIG *** MODEL DESCRIPTION ***

21 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	HED
			S	.110	.071	5.948E 05	3.260E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.95	264.6	1279	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH .040 FT)	SIREF (RH .040 FT)
93.0	.028	1.245	3773	2.526E-05	7.551E-08	1.262E 06	1.810E-02	2.395E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUARE MOOT (MMCACAR)	TRAN(TO)	BETA(TO)
	.21					
SICE(S)	386	250	HP	.0017	2.215E-01	2.391E-01

SG

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	503(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	2651(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.62							
I	501(250)	2.57	1.66	1.155E-02	.6322	1.457E-02	.8049	1.409E-02	.7784	1.491E-02
>	2652(250)	2.57	1.66	1.155E-02	.6322	1.457E-02	.8049	1.409E-02	.7784	1.491E-02
I	502(250)	3.62	2.71	8.945E-03	.4969	1.141E-02	.6300	1.103E-02	.6093	1.167E-02
>	2653(250)	3.62	2.71	8.945E-03	.4969	1.141E-02	.6300	1.103E-02	.6093	1.167E-02
SG			3.87							
I	503(250)	4.70	3.76	7.500E-03	.4167	9.651E-03	.5331	9.334E-03	.5155	9.876E-03
>	2654(250)	4.70	3.76	7.500E-03	.4167	9.651E-03	.5331	9.334E-03	.5155	9.876E-03
I	504(250)	5.75	4.84	6.707E-03	.3704	8.539E-03	.4717	8.258E-03	.4561	8.738E-03
>	2655(250)	5.75	4.84	6.707E-03	.3704	8.539E-03	.4717	8.258E-03	.4561	8.738E-03
I	505(250)	6.83	5.92	6.086E-03	.3351	7.724E-03	.4266	7.470E-03	.4126	7.904E-03
>	2656(250)	6.83	5.92	6.086E-03	.3351	7.724E-03	.4266	7.470E-03	.4126	7.904E-03
I	506(250)	7.88	6.97	5.550E-03	.3048	7.117E-03	.3931	6.883E-03	.3802	7.283E-03
>	2657(250)	7.88	6.97	5.550E-03	.3048	7.117E-03	.3931	6.883E-03	.3802	7.283E-03
I	507(250)	8.95	8.04	5.023E-03	.2874	6.626E-03	.3659	6.406E-03	.3538	6.779E-03
>	2658(250)	8.95	8.04	5.023E-03	.2874	6.626E-03	.3659	6.406E-03	.3538	6.779E-03
I	508(250)	10.03	9.12	4.866E-03	.2499	6.221E-03	.3436	6.016E-03	.3323	6.366E-03
>	2659(250)	10.03	9.12	4.866E-03	.2499	6.221E-03	.3436	6.016E-03	.3323	6.366E-03
I	509(250)	11.08	10.17	4.627E-03	.2555	5.891E-03	.3254	5.697E-03	.3147	6.028E-03
>	2660(250)	11.08	10.17	4.627E-03	.2555	5.891E-03	.3254	5.697E-03	.3147	6.028E-03
I	510(250)	12.16	11.25	4.400E-03	.2430	5.602E-03	.3094	5.418E-03	.2992	5.733E-03
>	2661(250)	12.16	11.25	4.400E-03	.2430	5.602E-03	.3094	5.418E-03	.2992	5.733E-03
I	511(250)	13.21	12.31	4.2[illegible]E-03	.2324	5.357E-03	.2959	5.181E-03	.2862	5.482E-03
>	2662(250)	13.21	12.31	4.2[illegible]E-03	.2324	5.357E-03	.2959	5.181E-03	.2862	5.482E-03

NASA-P1 OH 5. AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-74 PAGE 2

V41H-M2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

WRCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
21	11	TRIM				S	.110	.031	5.968E 05	3.260E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREMEND	ROLL-MODEL	YAW
7.95	264.0	1279	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF	SREF
93.0	.028	1.245	3773	2.528E-05	7.551E-08	1.262E 06	1.810E-02	2.395E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAPR)	TRAN(TO)	HETA(TO)
104(1)	.21					
>ICE(S)	346	250	88	.0817	2.215E-01	2.391SE-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	512(250)	14.29	13.30	4.035E-03	.2229	5.137E-03	.2837	4.968E-03	.2744	5.257E-03
>	2663(250)	14.29	13.30	4.035E-03	.2229	5.137E-03	.2837	4.968E-03	.2744	5.257E-03
1	513(250)	15.36	14.45	3.862E-03	.2144	4.962E-03	.2739	4.780E-03	.2640	5.057E-03
>	2664(250)	15.36	14.45	3.862E-03	.2144	4.962E-03	.2739	4.780E-03	.2640	5.057E-03
1	514(250)	16.41	15.50	3.748E-03	.2071	4.772E-03	.2636	4.615E-03	.2549	4.883E-03
>	2665(250)	16.41	15.50	3.748E-03	.2070	4.772E-03	.26	4.615E-03	.2549	4.883E-03
1	515(250)	17.49	16.58	3.624E-03	.2002	4.614E-03	.2549	4.462E-03	.2465	4.722E-03
>	2666(250)	17.49	16.58	3.624E-03	.2002	4.614E-03	.2549	4.462E-03	.2465	4.722E-03
1	516(250)	18.56	17.63	3.514E-03	.1941	4.474E-03	.2471	4.327E-03	.2390	4.579E-03
>	2667(250)	18.56	17.63	3.514E-03	.1941	4.474E-03	.2471	4.327E-03	.2390	4.579E-03
1	517(250)	19.62	18.71	3.412E-03	.1884	4.344E-03	.2399	4.201E-03	.2320	4.445E-03
>	2668(250)	19.62	18.71	3.412E-03	.1884	4.344E-03	.2399	4.201E-03	.2320	4.445E-03
1	518(250)	20.69	19.78	3.318E-03	.1832	4.224E-03	.2333	4.085E-03	.2256	4.323E-03
>	2669(250)	20.69	19.78	3.318E-03	.1832	4.224E-03	.2333	4.085E-03	.2256	4.323E-03
1	519(250)	21.76	20.83	3.233E-03	.1784	4.116E-03	.2273	3.981E-03	.2199	4.212E-03
>	2670(250)	21.76	20.83	3.233E-03	.1784	4.116E-03	.2273	3.981E-03	.2199	4.212E-03
1	520(250)	22.82	21.91	3.152E-03	.1741	4.014E-03	.2217	3.882E-03	.2144	4.107E-03
>	2671(250)	22.82	21.91	3.152E-03	.1741	4.014E-03	.2217	3.882E-03	.2144	4.107E-03
1	521(250)	23.90	22.99	3.078E-03	.1700	3.919E-03	.2164	3.790E-03	.2093	4.010E-03
>	2672(250)	23.90	22.99	3.078E-03	.1700	3.919E-03	.2164	3.790E-03	.2093	4.010E-03
1	522(250)	24.95	24.04	3.010E-03	.1662	3.832E-03	.2117	3.706E-03	.2047	3.921E-03
>	2673(250)	24.95	24.04	3.010E-03	.1662	3.832E-03	.2117	3.706E-03	.2047	3.921E-03
1	523(250)	26.02	25.11	2.944E-03	.1626	3.749E-03	.2071	3.626E-03	.2003	3.836E-03
>	2674(250)	26.02	25.11	2.944E-03	.1626	3.749E-03	.2071	3.626E-03	.2003	3.836E-03
1	524(250)	27.08	26.17	2.885E-03	.1593	3.673E-03	.2029	3.552E-03	.1962	3.759E-03
>	2675(250)	27.08	26.17	2.885E-03	.1593	3.673E-03	.2029	3.552E-03	.1962	3.759E-03

V41R-824

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	REO
21	11	TRIP				S	.110	.031	5.968E 05	3.260E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.95	266.6	1274	24.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
93.8	.024	1.245	3773	2.526E-05	7.551E-08	1.262E 06	1.810E-02	2.295E-02

CAMERA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	BETA(TO)
104(T)	421					
SILE(S)	296	250	96	.0617	2.215E-01	2.391SE-01
SG						

	PIC NO	TIME	RELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	52-(250)	24.15	27.24	2.862E-03	.1562	3.600E-03	.1968	3.481E-03	.1923	3.684E-03
2	267C(250)	24.15	27.24	2.862E-03	.1562	3.600E-03	.1968	3.481E-03	.1923	3.684E-03
1	52C(250)	24.20	27.29	2.774E-03	.1532	3.532E-03	.1951	3.416E-03	.1887	3.615E-03
2	2677(250)	24.20	27.29	2.774E-03	.1532	3.532E-03	.1951	3.416E-03	.1887	3.615E-03
1	527(250)	30.28	27.37	2.723E-03	.1504	3.467E-03	.1915	3.353E-03	.1852	3.548E-03
2	267E(250)	30.28	27.37	2.723E-03	.1504	3.467E-03	.1915	3.353E-03	.1852	3.548E-03
		30.58		MODEL HAS LEFT CENTERLINE						
1	52-(250)	31.33	31.42	2.675E-03	.1478	3.406E-03	.1881	3.294E-03	.1820	3.486E-03
2	267C(250)	31.33	31.42	2.675E-03	.1477	3.405E-03	.1881	3.293E-03	.1819	3.484E-03
1	52-(250)	32.41	31.50	2.629E-03	.1452	3.348E-03	.1849	3.238E-03	.1788	3.426E-03
2	268(250)	32.41	31.50	2.629E-03	.1452	3.348E-03	.1849	3.238E-03	.1788	3.426E-03

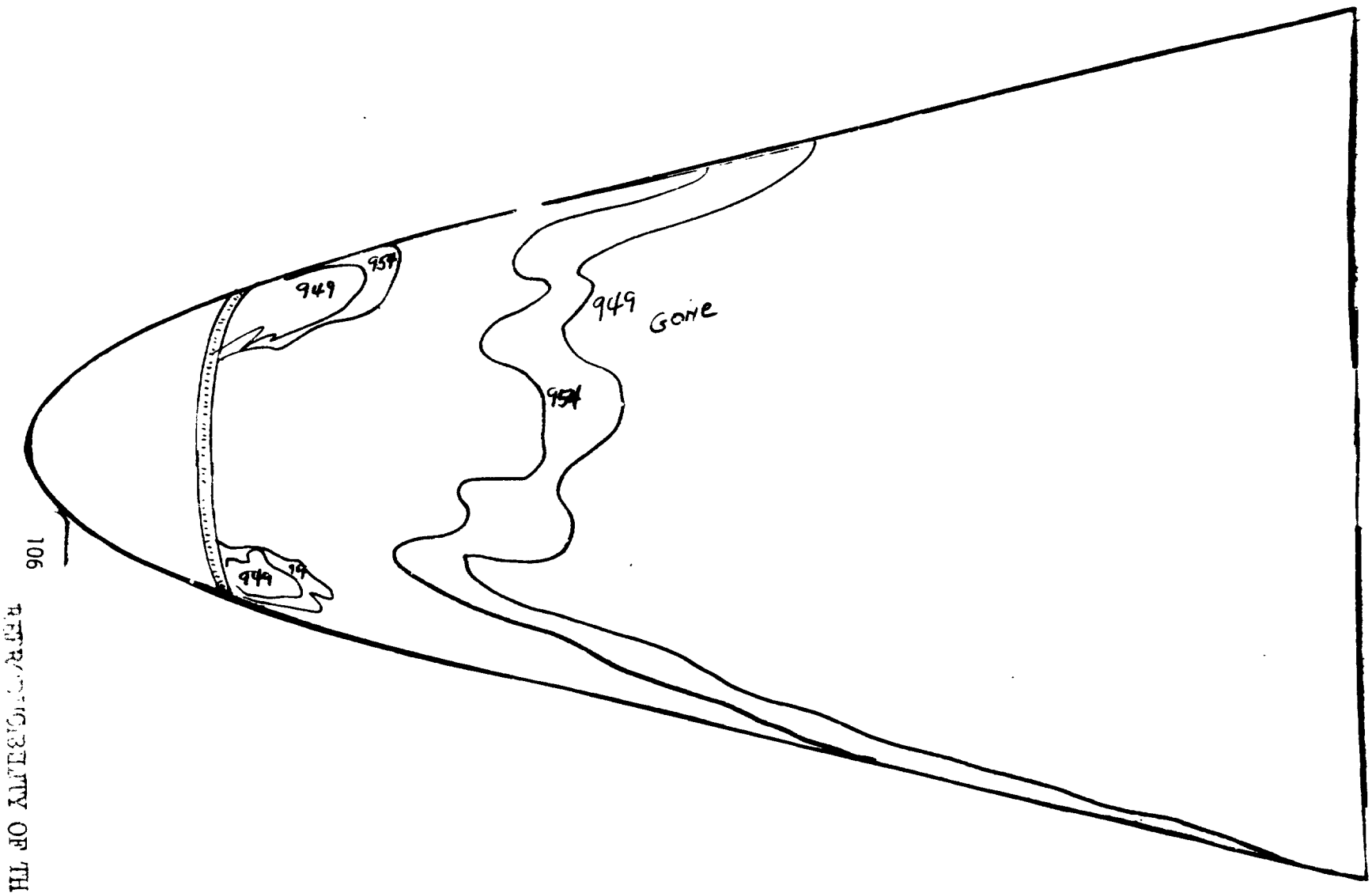
421
Gp 22

$T_{pc} = 300°F$

935 1st Fr ℄

265 psia
820 °,=

$\alpha = 40°$



NASA-HI OH 94

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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V41H-R26

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE B/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	B/L	DIA.	REA	REU
22	11	TRIP				S	.110	.031	5.975E 05	3.263E 03

MACH NO	HO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.95	264.2	1277	34.45	-9.95	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .060 FT)	STREF (RE .060 FT)
93.6	.029	1.267	3764	2.592E-05	7.53ME-08	1.263E 06	1.809E-02	2.395E-02

LAMPEA (DEG F)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUARE ROOT (RHOUACAR)	TRAN(TO)	BETA(TO)
	271					
STCE(S)	3P6	380	89	.0636	2.898E-01	3.3663E-01

36

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.93TO)	H(.93TO)/HREF	ST(TO)
I	532(300)	1.52		MODEL HAS NOT REACHED CENTERLINE						
>	2483(300)	1.52		MODEL HAS NOT REACHED CENTERLINE						
INFCT TIME =			1.05							
I	533(300)	2.57	1.05	1.067E-02	.9216	2.173E-02	1.2014	1.984E-02	1.0496	2.107E-02
>	2486(300)	2.57	1.05	1.067E-02	.9216	2.173E-02	1.2014	1.984E-02	1.0496	2.107E-02
I	534(300)	3.62	2.70	1.362E-02	.7201	1.694E-02	.9367	1.534E-02	.8409	1.694E-02
>	2485(300)	3.62	2.70	1.362E-02	.7201	1.694E-02	.9367	1.534E-02	.8409	1.694E-02
36			3.95							
I	535(300)	4.70	3.78	1.101E-02	.6089	1.438E-02	.7937	1.301E-02	.7195	1.432E-02
>	2488(300)	4.70	3.78	1.101E-02	.6089	1.438E-02	.7937	1.301E-02	.7195	1.432E-02
I	536(300)	5.78	4.86	9.714E-03	.5371	1.268E-02	.7002	1.148E-02	.6347	1.263E-02
>	2487(300)	5.78	4.86	9.714E-03	.5371	1.268E-02	.7002	1.148E-02	.6347	1.263E-02
I	537(300)	6.83	5.94	8.867E-03	.4869	1.148E-02	.6348	1.041E-02	.5756	1.145E-02
>	2488(300)	6.83	5.94	8.867E-03	.4869	1.148E-02	.6348	1.041E-02	.5756	1.145E-02
I	538(300)	7.90	6.98	8.094E-03	.4478	1.058E-02	.5848	9.571E-03	.5292	1.053E-02
>	2489(300)	7.90	6.98	8.094E-03	.4478	1.058E-02	.5848	9.571E-03	.5292	1.053E-02
I	539(300)	8.95	8.03	7.551E-03	.4175	9.863E-03	.5662	8.922E-03	.4933	9.819E-03
>	2490(300)	8.95	8.03	7.534E-03	.4168	9.824E-03	.5636	8.909E-03	.4926	9.804E-03
I	540(300)	10.03	9.11	7.090E-03	.3921	9.243E-03	.5111	8.378E-03	.4633	9.221E-03
>	2491(300)	10.03	9.11	7.090E-03	.3921	9.243E-03	.5111	8.378E-03	.4633	9.221E-03
I	541(300)	11.11	10.19	6.765E-03	.3709	8.741E-03	.4833	7.923E-03	.4381	8.720E-03
>	2492(300)	11.11	10.19	6.765E-03	.3704	8.741E-03	.4833	7.923E-03	.4381	8.720E-03
I	542(300)	12.18	11.27	6.304E-03	.3530	8.322E-03	.4601	7.543E-03	.4171	8.302E-03
>	2493(300)	12.16	11.22	6.304E-03	.3530	8.322E-03	.4601	7.543E-03	.4171	8.302E-03
I	543(300)	13.23	12.31	6.094E-03	.3372	7.950E-03	.4396	7.206E-03	.3984	7.931E-03
>	2494(300)	13.23	12.31	6.094E-03	.3372	7.950E-03	.4396	7.206E-03	.3984	7.931E-03

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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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941R-H28

WNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	HED
22	11	TRIM				5	.110	.071	5.975E 05	3.203E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.45	244.2	1277	39.95	-0.95	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	SIREF (IN .060 FT)
93.6	.028	1.247	3749	2.572E-05	7.538E-08	1.263E 06	1.809E-02	2.395E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGAM)	TRAN(TO)	BETA(TO)
IOF(T)	421					
SICE(S)	3P6	300	49	.0036	2.090E-01	3.3603E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	664(300)	14.31	13.39	5.6[illegible]E-03	.3234	7.024E-03	.4215	6.910E-03	.3421	7.605E-03
2	2694(300)	14.31	13.39	5.6[illegible]E-03	.3234	7.024E-03	.4215	6.910E-03	.3421	7.605E-03
1	665(300)	14.36	14.44	5.631E-03	.3114	7.341E-03	.4059	6.654E-03	.3679	7.323E-03
2	2696(300)	14.36	14.44	5.631E-03	.3114	7.341E-03	.4059	6.654E-03	.3679	7.323E-03
1	666(300)	14.44	15.51	5.432E-03	.3004	7.042E-03	.3916	6.414E-03	.3549	7.065E-03
2	2697(300)	14.44	15.51	5.432E-03	.3004	7.042E-03	.3916	6.414E-03	.3549	7.065E-03
1	667(300)	17.49	16.57	5.257E-03	.2937	6.853E-03	.3789	6.212E-03	.3435	6.837E-03
2	2698(300)	17.49	16.57	5.257E-03	.2907	6.853E-03	.3789	6.212E-03	.3435	6.837E-03
1	668(300)	18.57	17.64	5.044E-03	.2817	6.641E-03	.3672	6.020E-03	.3328	6.625E-03
2	2699(300)	18.57	17.64	5.044E-03	.2817	6.641E-03	.3672	6.020E-03	.3328	6.625E-03
1	669(300)	19.62	18.69	4.949E-03	.2736	6.451E-03	.3567	5.846E-03	.3233	6.436E-03
2	2700(300)	19.62	18.69	4.949E-03	.2736	6.451E-03	.3567	5.846E-03	.3233	6.436E-03
1	670(300)	20.69	19.77	4.812E-03	.2661	6.273E-03	.3469	5.687E-03	.3144	6.258E-03
2	2701(300)	20.69	19.77	4.812E-03	.2661	6.273E-03	.3469	5.687E-03	.3144	6.258E-03
1	671(300)	21.74	20.82	4.698E-03	.2593	6.113E-03	.3380	5.541E-03	.3064	6.098E-03
2	2702(300)	21.74	20.82	4.698E-03	.2593	6.113E-03	.3380	5.541E-03	.3064	6.098E-03
1	672(300)	22.82	21.90	4.573E-03	.2523	5.961E-03	.3296	5.403E-03	.2988	5.946E-03
2	2703(300)	22.82	21.90	4.573E-03	.2523	5.961E-03	.3296	5.403E-03	.2988	5.946E-03
1	673(300)	23.90	22.97	4.404E-03	.2469	5.820E-03	.3218	5.275E-03	.2917	5.805E-03
2	2704(300)	23.90	22.97	4.404E-03	.2468	5.820E-03	.3218	5.275E-03	.2917	5.805E-03
1	674(300)	24.95	24.02	4.305E-03	.2414	5.691E-03	.3147	5.158E-03	.2852	5.677E-03
2	2705(300)	24.95	24.02	4.305E-03	.2414	5.691E-03	.3147	5.158E-03	.2852	5.677E-03
1	675(300)	26.02	25.10	4.271E-03	.2391	5.567E-03	.3078	5.047E-03	.2790	5.554E-03
2	2706(300)	26.02	25.10	4.271E-03	.2391	5.567E-03	.3078	5.047E-03	.2790	5.554E-03
1	676(300)	27.08	26.16	4.146E-03	.2314	5.454E-03	.3016	4.944E-03	.2734	5.441E-03
2	2707(300)	27.08	26.16	4.146E-03	.2314	5.454E-03	.3016	4.944E-03	.2734	5.441E-03

VAIH-M2A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REX	RED
22	11	TRIP				5	.110	.031	5.975E 05	3.203E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PHEMENO	ROLL-MODEL	YAW
7.95	244.2	1277	39.95	-9.95	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH= .060 FT)	STHEF (RH= .060 FT)
92.6	.024	1.247	3769	2.525E-05	7.538E-08	1.263E 06	1.809E-02	2.395E-02

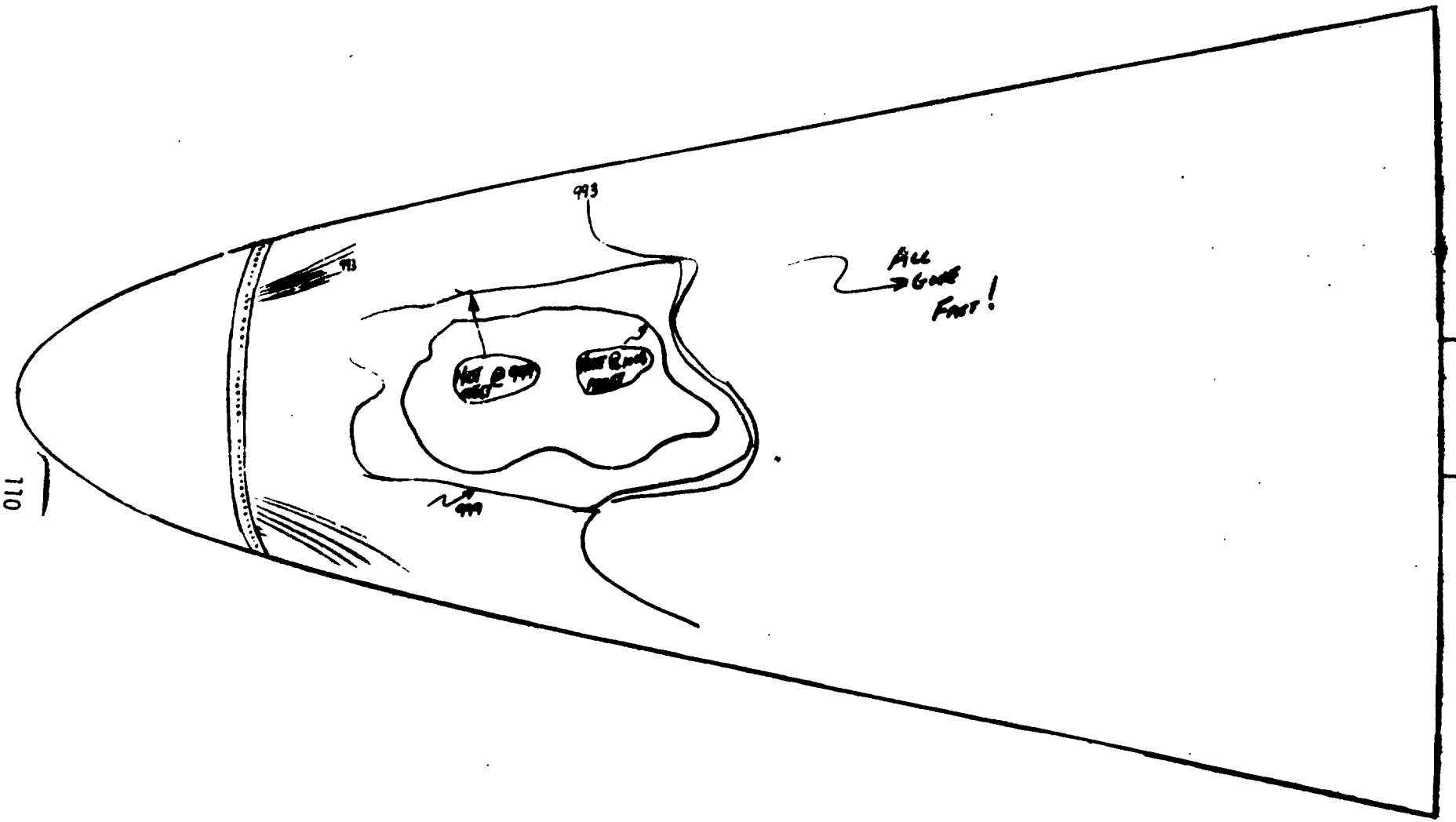
GAMMA (DEG F)	WALL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOKCAM)	TRAN(TO)	BETA(TO)
	021					
STCE(S)	3M6	300	89	.0036	2.098E-01	3.3603E-01
36						

	PIC NO	TIME	REL TIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
1	557(300)	24.15	27.23	4.101E-03	.2267	5.346E-03	.2956	4.845E-03	.2679	5.333E-03
2	2705(300)	24.15	27.23	4.101E-03	.2267	5.346E-03	.2956	4.845E-03	.2679	5.333E-03
1	558(300)	24.20	24.24	4.024E-03	.2225	5.245E-03	.2900	4.755E-03	.2629	5.233E-03
2	2706(300)	24.20	24.24	4.024E-03	.2225	5.245E-03	.2900	4.755E-03	.2629	5.233E-03
1	559(300)	30.28	29.35	3.945E-03	.2184	5.148E-03	.2847	4.667E-03	.2580	5.136E-03
2	2711(300)	30.28	29.35	3.945E-03	.2184	5.148E-03	.2847	4.667E-03	.2580	5.136E-03
		30.30		MODEL HAS LEFT CENTERLINE						
1	560(300)	31.23	3 .41	3.880E-03	.2146	5.058E-03	.2797	4.585E-03	.2535	5.046E-03
2	2711(300)	31.33	31.41	3.880E-03	.2146	5.058E-03	.2797	4.585E-03	.2535	5.046E-03
1	561(300)	32.01	31.68	3.813E-03	.2109	4.971E-03	.2749	4.506E-03	.2492	4.959E-03
2	2712(300)	32.01	31.68	3.813E-03	.2109	4.971E-03	.2749	4.506E-03	.2492	4.959E-03

388 $\alpha = 30°$ 991 is, Te fully on ℄

GP 23 $P_0 = 210$ PSIA $T_R = 175°F$

$T_0 = 845°F$



Not Too Useful a Run!

RSR 1/9/74

NASA-HI OF 56

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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V61H-R2H

GROUP	COMPS	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REX	RED
23	11	TRIP				5	.110	.031	4.811E 05	2.620E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREMEND	ROLL-MODEL	YAW
7.94	211.6	1275	29.93	.07	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHOEF (RH= .040 FT)	SIGEF (RH= .040 FT)
93.7	.023	1.004	3766	2.037E-05	7.544E-08	1.017E 06	1.622E-02	2.666E-02

CAPSEA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RMCACRA)	TRAR(TO)	BETA(TO)
SIDE(S)	3RH					
SG	283	175	98	.0573	1.172E-01	1.145HE-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TC)	H(.9TC)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	58H(17S)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	273V(17S)	1.50		MODEL HAS NOT REACHED CENTERLINE						
IN-FOCT TIME =		1.62								
I	589(17S)	2.55	1.04	5.132E-03	.3163	6.369E-03	.3926	6.187E-03	.3814	8.338E-03
>	276-(17S)	2.55	1.04	5.132E-03	.3163	6.369E-03	.3926	6.147E-03	.3814	8.338E-03
I	59(17S)	3.62	2.71	3.9[illegible]E-03	.2657	4.947E-03	.3049	4.808E-03	.2962	6.477E-03
>	276(17S)	3.62	2.71	3.9[illegible]E-03	.2657	4.947E-03	.3049	4.808E-03	.2962	6.477E-03
>G		3.93								
I	591(17S)	4.70	3.79	3.373E-03	.2079	4.188E-03	.2580	4.067E-03	.2507	5.480E-03
>	2742(17S)	4.70	3.79	3.373E-03	.2079	4.188E-03	.2580	4.067E-03	.2507	5.480E-03
I	592(17S)	5.75	4.84	2.9[illegible]E-03	.1839	3.704E-03	.2283	3.598E-03	.2218	4.849E-03
>	2743(17S)	5.75	4.84	2.9[illegible]E-03	.1839	3.704E-03	.2283	3.598E-03	.2218	4.849E-03
I	593(17S)	6.83	5.92	2.6[illegible]E-03	.1664	3.350E-03	.2065	3.254E-03	.2006	4.386E-03
>	2744(17S)	6.83	5.92	2.6[illegible]E-03	.1664	3.350E-03	.2065	3.254E-03	.2006	4.386E-03
I	594(17S)	7.90	6.99	2.4[illegible]E-03	.1530	3.082E-03	.1899	2.994E-03	.1845	4.034E-03
>	2745(17S)	7.90	6.99	2.4[illegible]E-03	.1530	3.082E-03	.1899	2.994E-03	.1845	4.034E-03
I	595(17S)	8.95	8.04	2.315E-03	.1427	2.873E-03	.1771	2.791E-03	.1720	3.761E-03
>	2746(17S)	8.95	8.04	2.315E-03	.1427	2.873E-03	.1771	2.791E-03	.1720	3.761E-03
I	596(17S)	10.03	9.12	2.176E-03	.1340	2.698E-03	.1663	2.621E-03	.1616	3.532E-03
>	2747(17S)	10.03	9.12	2.176E-03	.1340	2.698E-03	.1663	2.621E-03	.1616	3.532E-03
I	597(17S)	11.11	10.20	2.056E-03	.1267	2.552E-03	.1573	2.479E-03	.1528	3.341E-03
>	2748(17S)	11.11	10.20	2.056E-03	.1267	2.552E-03	.1573	2.479E-03	.1528	3.341E-03
I	598(17S)	12.16	11.25	1.9[illegible]E-03	.1207	2.438E-03	.1498	2.360E-03	.1455	3.181E-03
>	2749(17S)	12.16	11.25	1.9[illegible]E-03	.1207	2.438E-03	.1498	2.360E-03	.1455	3.181E-03
I	599(17S)	13.23	12.32	1.870E-03	.1153	2.321E-03	.1431	2.255E-03	.1390	3.039E-03
>	2750(17S)	13.23	12.32	1.870E-03	.1153	2.321E-03	.1431	2.255E-03	.1390	3.039E-03

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V61H-020 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
29	11	TRIP				5	.110	.031	4.811E 05	2.620E 03

MACH NO	HO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-FOREBEND	ROLL-MOUP	YAW
7.96	211.0	1275	29.93	.07	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (IN .040 FT)	SIMEF (IN .040 FT)
93.7	.023	1.000	3700	2.098E-05	7.544E-08	1.017E 06	1.622E-02	2.006E-02

CAMERA IDF(I) SICF(S)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	HETA(TO)
56	288 383	175	90	.0573	1.172E-01	1.145BE-01

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1000(175)	14.29	13.38	1.785E-03	.1107	2.228E-03	.1373	2.165E-03	.1334	2.917E-03
S	2751(175)	14.31	13.40	1.785E-03	.1104	2.226E-03	.1372	2.163E-03	.1333	2.914E-03
I	1001(175)	15.26	14.45	1.727E-03	.1065	2.144E-03	.1321	2.082E-03	.1284	2.806E-03
S	2752(175)	15.26	14.45	1.727E-03	.1065	2.144E-03	.1321	2.082E-03	.1284	2.806E-03
I	1002(175)	16.44	15.53	1.668E-03	.1027	2.069E-03	.1275	2.004E-03	.1238	2.707E-03
S	2753(175)	16.44	15.53	1.668E-03	.1027	2.069E-03	.1275	2.004E-03	.1238	2.707E-03
S	2754(175)	17.44	16.54	1.612E-03	.0994	2.001E-03	.1234	1.966E-03	.1198	2.620E-03
I	1003(175)	17.51	16.61	1.611E-03	.0993	2.000E-03	.1233	1.965E-03	.1198	2.618E-03
I	1004(175)	18.57	17.68	1.538E-03	.0963	1.939E-03	.1195	1.886E-03	.1161	2.539E-03
S	2755(175)	18.57	17.68	1.538E-03	.0963	1.939E-03	.1195	1.886E-03	.1161	2.539E-03
I	1005(175)	19.64	18.73	1.517E-03	.0935	1.883E-03	.1161	1.824E-03	.1127	2.465E-03
S	2756(175)	19.64	18.73	1.517E-03	.0935	1.883E-03	.1161	1.824E-03	.1127	2.465E-03
I	1006(175)	20.69	19.78	1.478E-03	.0910	1.832E-03	.1129	1.780E-03	.1097	2.399E-03
S	2757(175)	20.69	19.78	1.478E-03	.0910	1.832E-03	.1129	1.780E-03	.1097	2.399E-03
I	1007(175)	21.77	20.86	1.438E-03	.0886	1.784E-03	.1100	1.733E-03	.1068	2.336E-03
S	2758(175)	21.77	20.86	1.438E-03	.0886	1.784E-03	.1100	1.733E-03	.1068	2.336E-03
I	1008(175)	22.85	21.94	1.402E-03	.0864	1.740E-03	.1073	1.690E-03	.1042	2.278E-03
S	2759(175)	22.85	21.94	1.402E-03	.0864	1.740E-03	.1073	1.690E-03	.1042	2.278E-03
I	1009(175)	23.90	22.99	1.369E-03	.0844	1.700E-03	.1048	1.651E-03	.1018	2.225E-03
S	2760(175)	23.90	22.99	1.369E-03	.0844	1.700E-03	.1048	1.651E-03	.1018	2.225E-03
I	1010(175)	24.97	24.06	1.338E-03	.0825	1.661E-03	.1024	1.614E-03	.0995	2.175E-03
S	2761(175)	24.97	24.06	1.338E-03	.0825	1.661E-03	.1024	1.614E-03	.0995	2.175E-03
I	1011(175)	26.02	25.11	1.310E-03	.0808	1.626E-03	.1002	1.580E-03	.0974	2.129E-03
S	2762(175)	26.02	25.11	1.310E-03	.0808	1.626E-03	.1002	1.580E-03	.0974	2.129E-03
I	1012(175)	27.10	26.19	1.243E-03	.0791	1.592E-03	.0982	1.547E-03	.0953	2.085E-03
S	2763(175)	27.10	26.19	1.243E-03	.0791	1.592E-03	.0982	1.547E-03	.0953	2.085E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REU
23	11	TRIP				S	.110	.031	4.811E 05	2.628E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.94	211.6	1275	29.93	.07	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH .040 FT)	SIREF (RH .040 FT)
93.7	.023	1.904	3760	2.033E-05	7.544E-08	1.017E 06	1.422E-02	2.066E-02

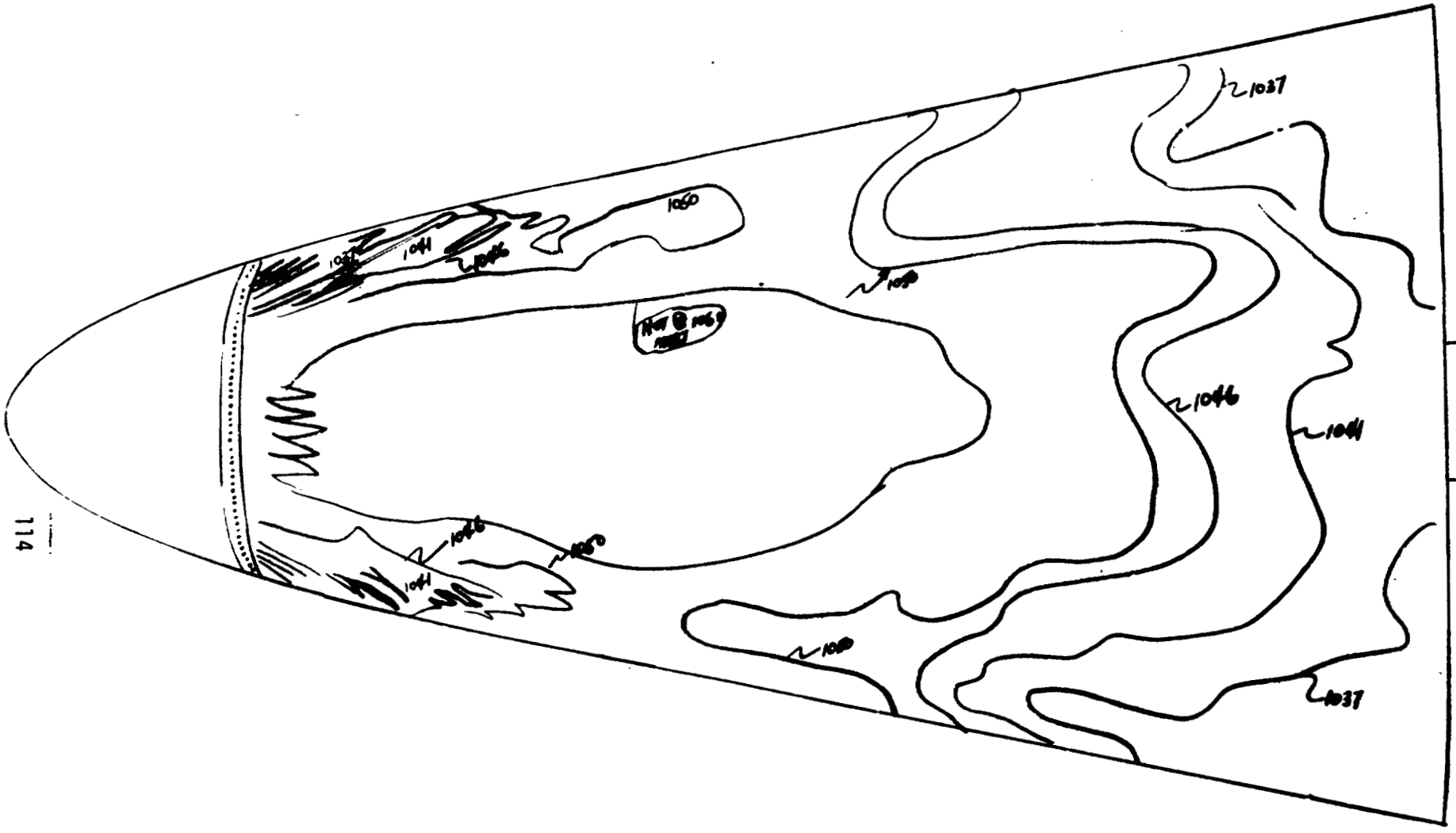
CAPFSA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAK)	TRAN(TO)	META(TO)
10P(I)	2HP					
SIDE(S)	383	175	98	.0573	1.172E-01	1.145HE-01
SG						

	PTC NO	TINF	DELTINF	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1013(175)	28.18	27.27	1.257E-03	.0775	1.561E-03	.0962	1.516E-03	.0934	2.043E-03
3	2754(175)	28.18	27.27	1.257E-03	.0775	1.561E-03	.0962	1.516E-03	.0934	2.043E-03
1	1014(175)	29.23	28.32	1.244E-03	.0761	1.531E-03	.0944	1.488E-03	.0917	2.005E-03
3	2755(175)	29.23	28.32	1.244E-03	.0761	1.531E-03	.0944	1.488E-03	.0917	2.005E-03
1	1015(175)	30.20	29.39	1.211E-03	.0746	1.503E-03	.0926	1.460E-03	.0900	1.968E-03
3	2756(175)	30.20	29.39	1.211E-03	.0746	1.503E-03	.0926	1.460E-03	.0900	1.968E-03
		30.53		MODEL HAS LEFT CENTERLINE						
1	1016(175)	31.38	30.47	1.196E-03	.0733	1.476E-03	.0910	1.434E-03	.0884	1.933E-03
3	2757(175)	31.38	30.47	1.196E-03	.0733	1.476E-03	.0910	1.434E-03	.0884	1.933E-03
1	1017(175)	32.43	31.52	1.178E-03	.0721	1.451E-03	.0895	1.410E-03	.0869	1.900E-03
3	2758(175)	32.43	31.52	1.178E-03	.0721	1.451E-03	.0895	1.410E-03	.0869	1.900E-03

388 $\alpha = 30°$

GP 2# 210 PSIA
815 $T_{PL} = 250°F$

1023 1ST FR FULL ON ℄



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9414-024

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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WRCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
24	11	1414				5	.110	.031	4.875E 05	2.663E 03

MACH NO	PC(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRENEND	ROLL-MODEL	YAW
7.44	212.1	1260	29.91	.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.0	.023	1.067	3752	2.057E-05	7.489E-08	1.031E 05	1.622E-02	2.651E-02

CAPFGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAMU)	THAW(TO)	RETA(TO)
10F(1)	3R8					
>1LF(5)	3R3	250	87	.0617	2.267E-01	2.4608E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
	1020(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	2771(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
IN.FCT TIME =			1.63							
	1021(250)	2.57	1.06	1.17HE-02	.7269	1.504E-02	.9273	1.455E-02	.8970	1.895E-02
>	2772(250)	2.57	1.06	1.17HE-02	.7260	1.504E-02	.9273	1.455E-02	.8970	1.895E-02
	1022(250)	3.62	2.71	9.217E-03	.5682	1.177E-02	.7258	1.139E-02	.7020	1.483E-02
>	2773(250)	3.62	2.71	9.217E-03	.5682	1.177E-02	.7258	1.139E-02	.7020	1.483E-02
>6										
	1023(250)	4.70	3.76	7.798E-03	.4808	9.963E-03	.6142	9.637E-03	.5940	1.255E-02
>	2774(250)	4.70	3.76	7.798E-03	.4808	9.963E-03	.6142	9.637E-03	.5940	1.255E-02
	1024(250)	5.78	4.87	6.863E-03	.4243	8.792E-03	.5420	8.506E-03	.5242	1.108E-02
>	2775(250)	5.78	4.87	6.863E-03	.4243	8.792E-03	.5420	8.506E-03	.5242	1.108E-02
	1025(250)	6.83	5.92	6.242E-03	.3868	7.973E-03	.4915	7.712E-03	.4754	1.005E-02
>	2776(250)	6.83	5.92	6.242E-03	.3868	7.973E-03	.4915	7.712E-03	.4754	1.005E-02
	1026(250)	7.90	6.99	5.741E-03	.3539	7.336E-03	.4521	7.096E-03	.4373	9.240E-03
>	2777(250)	7.90	6.99	5.741E-03	.3539	7.336E-03	.4521	7.096E-03	.4373	9.240E-03
	1027(250)	8.95	8.04	5.353E-03	.3300	6.838E-03	.4215	6.616E-03	.4077	8.616E-03
>	2778(250)	8.95	8.04	5.353E-03	.3300	6.838E-03	.4215	6.616E-03	.4077	8.616E-03
	1028(250)	10.03	9.12	5.027E-03	.3099	6.422E-03	.3959	6.212E-03	.3829	8.091E-03
>	2779(250)	10.03	9.12	5.027E-03	.3099	6.422E-03	.3959	6.212E-03	.3829	8.091E-03
	1029(250)	11.11	10.20	4.755E-03	.2931	6.074E-03	.3744	5.875E-03	.3621	7.652E-03
>	2780(250)	11.11	10.20	4.755E-03	.2931	6.074E-03	.3744	5.875E-03	.3621	7.652E-03
	1030(250)	12.18	11.25	4.527E-03	.2791	5.783E-03	.3565	5.593E-03	.3448	7.286E-03
>	2781(250)	12.18	11.25	4.527E-03	.2791	5.783E-03	.3565	5.593E-03	.3448	7.286E-03
	1031(250)	13.23	12.32	4.325E-03	.2666	5.525E-03	.3406	5.344E-03	.3294	6.961E-03
>	2782(250)	13.23	12.32	4.325E-03	.2666	5.525E-03	.3406	5.344E-03	.3294	6.961E-03

WNCIN	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REN	RED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
26	11	TRIP				S	.110	.031	4.875E 05	2.063E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	212.1	1266	24.91	.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	SIREF
93.0	.023	1.607	3752	2.057E-05	7.484E-08	1.031E 06	1.622E-02 (R= .040 FT)	2.651E-02 (R= .040 FT)

CAMERA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (BMCACKR)	TRAN(TO)	HETA(TO)
104(T)	384					
51CF(S)	383	250	RT	.0617	2.267E-01	2.660BE-01
36						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1032(250)	14.29	13.34	4.13E-03	.2559	5.303E-03	.3269	5.129E-03	.3162	6.682E-03
S	2783(250)	14.29	13.34	4.13E-03	.2559	5.303E-03	.3269	5.129E-03	.3162	6.682E-03
I	1033(250)	15.34	14.43	3.97E-03	.2464	5.106E-03	.3148	4.934E-03	.3045	6.434E-03
S	2784(250)	15.34	14.43	3.97E-03	.2464	5.106E-03	.3148	4.934E-03	.3045	6.434E-03
I	1034(250)	16.41	15.50	3.85E-03	.2377	4.928E-03	.3036	4.764E-03	.2937	6.206E-03
S	2785(250)	16.41	15.50	3.85E-03	.2377	4.928E-03	.3036	4.764E-03	.2937	6.206E-03
I	1035(250)	17.45	16.58	3.72E-03	.2299	4.763E-03	.2936	4.607E-03	.2840	6.001E-03
S	2786(250)	17.45	16.58	3.72E-03	.2299	4.763E-03	.2936	4.607E-03	.2840	6.001E-03
I	1036(250)	18.54	17.63	3.61E-03	.2229	4.619E-03	.2847	4.468E-03	.2754	5.820E-03
S	2787(250)	18.54	17.63	3.61E-03	.2229	4.619E-03	.2847	4.468E-03	.2754	5.820E-03
I	1037(250)	19.62	18.71	3.51E-03	.2164	4.484E-03	.2766	4.337E-03	.2674	5.650E-03
S	2788(250)	19.62	18.71	3.51E-03	.2164	4.484E-03	.2766	4.337E-03	.2674	5.650E-03
I	1038(250)	20.69	19.78	3.41E-03	.2104	4.361E-03	.2688	4.218E-03	.2600	5.494E-03
S	2789(250)	20.69	19.78	3.41E-03	.2104	4.361E-03	.2688	4.218E-03	.2600	5.494E-03
I	1039(250)	21.74	20.83	3.32E-03	.2050	4.249E-03	.2619	4.110E-03	.2533	5.354E-03
S	2790(250)	21.74	20.83	3.32E-03	.2050	4.249E-03	.2619	4.110E-03	.2533	5.354E-03
I	1040(250)	22.82	21.91	3.24E-03	.1999	4.143E-03	.2554	4.008E-03	.2470	5.220E-03
S	2791(250)	22.82	21.91	3.24E-03	.1999	4.143E-03	.2554	4.008E-03	.2470	5.220E-03
I	1041(250)	23.87	22.96	3.16E-03	.1953	4.047E-03	.2495	3.915E-03	.2413	5.100E-03
S	2792(250)	23.87	22.96	3.16E-03	.1953	4.047E-03	.2495	3.915E-03	.2413	5.100E-03
I	1042(250)	24.95	24.04	3.07E-03	.1909	3.956E-03	.2438	3.826E-03	.2359	4.984E-03
S	2793(250)	24.95	24.04	3.07E-03	.1909	3.956E-03	.2438	3.826E-03	.2359	4.984E-03
I	1043(250)	26.00	25.09	3.01E-03	.1869	3.872E-03	.2387	3.745E-03	.2309	4.879E-03
S	2794(250)	26.00	25.09	3.01E-03	.1869	3.872E-03	.2387	3.745E-03	.2309	4.879E-03
I	1044(250)	27.08	26.17	2.96E-03	.1830	3.792E-03	.2337	3.667E-03	.2261	4.777E-03
S	2795(250)	27.08	26.17	2.96E-03	.1830	3.792E-03	.2337	3.667E-03	.2261	4.777E-03

WNCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REA	RED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
24	11	TRIP				5	.110	.031	4.875E 05	2.663E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.94	212.1	1266	29.91	.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SIREF (H= .040 FT)
93.6	.023	1.007	3752	2.057E-05	7.489E-08	1.031E 06	1.622E-02	2.651E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SLUANF WOOT (RHOCACAW)	TRAN(TO)	BETA(TO)
(DF(T)	3B4					
3ILE(S)	3B3	250	87	.9617	2.267E-01	2.4608E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1245(250)	28.15	27.24	2.9[illegible]E-03	.1793	3.718E-03	.2291	3.594E-03	.2216	4.687E-03
S	2796(250)	28.15	27.24	2.9[illegible]E-03	.1793	3.718E-03	.2291	3.594E-03	.2216	4.682E-03
I	1246(250)	29.20	28.29	2.8[illegible]E-03	.1760	3.646E-03	.2248	3.527E-03	.2174	4.594E-03
S	2797(250)	29.20	28.29	2.8[illegible]E-03	.1760	3.646E-03	.2248	3.527E-03	.2174	4.594E-03
I	1247(250)	30.28	29.37	2.8[illegible]E-03	.1727	3.579E-03	.2206	3.462E-03	.2134	4.509E-03
S	2798(250)	30.28	29.37	2.8[illegible]E-03	.1727	3.579E-03	.2206	3.462E-03	.2134	4.509E-03
I	1248(250)	31.36	30.45	2.7[illegible]E-03	.1696	3.515E-03	.2167	3.400E-03	.2096	4.429E-03
S	2799(250)	31.36	30.45	2.7[illegible]E-03	.1696	3.515E-03	.2167	3.400E-03	.2096	4.429E-03
I	1249(250)	32.41	31.50	2.7[illegible]E-03	.1668	3.456E-03	.2130	3.343E-03	.2060	4.354E-03
S	2800(250)	32.41	31.50	2.7[illegible]E-03	.1668	3.456E-03	.2130	3.343E-03	.2060	4.354E-03
I	1250(250)	33.48	32.57	2.6[illegible]E-03	.1640	3.398E-03	.2095	3.287E-03	.2026	4.282E-03
S	2801(250)	33.48	32.57	2.6[illegible]E-03	.1640	3.398E-03	.2095	3.287E-03	.2026	4.282E-03
I	1251(250)	34.53	33.62	2.6[illegible]E-03	.1614	3.345E-03	.2062	3.235E-03	.1994	4.214E-03
S	2802(250)	34.53	33.62	2.6[illegible]E-03	.1614	3.345E-03	.2062	3.235E-03	.1994	4.214E-03
I	1252(250)	35.61	34.70	2.5[illegible]E-03	.1589	3.292E-03	.2030	3.185E-03	.1963	4.148E-03
S	2803(250)	35.61	34.70	2.5[illegible]E-03	.1589	3.292E-03	.2030	3.185E-03	.1963	4.148E-03
I	1253(250)	36.69	35.78	2.5[illegible]E-03	.1565	3.243E-03	.1999	3.136E-03	.1933	4.085E-03
S	2804(250)	36.69	35.78	2.5[illegible]E-03	.1565	3.243E-03	.1999	3.136E-03	.1933	4.085E-03
I	1254(250)	37.74	36.83	2.5[illegible]E-03	.1542	3.196E-03	.1970	3.091E-03	.1906	4.027E-03
S	2805(250)	37.74	36.83	2.5[illegible]E-03	.1542	3.196E-03	.1970	3.091E-03	.1906	4.027E-03
I	1255(250)	38.81	37.90	2.4[illegible]E-03	.1520	3.150E-03	.1942	3.047E-03	.1878	3.969E-03
S	2806(250)	38.81	37.90	2.4[illegible]E-03	.1520	3.150E-03	.1942	3.047E-03	.1878	3.969E-03
I	1256(250)	39.87	38.96	2.4[illegible]E-03	.1500	3.107E-03	.1916	3.006E-03	.1853	3.915E-03
S	2807(250)	39.87	38.96	2.4[illegible]E-03	.1500	3.107E-03	.1916	3.006E-03	.1853	3.915E-03
I	1257(250)	40.94	40.03	2.4[illegible]E-03	.1479	3.065E-03	.1890	2.965E-03	.1828	3.862E-03
S	2808(250)	40.94	40.03	2.4[illegible]E-03	.1479	3.065E-03	.1890	2.965E-03	.1828	3.862E-03

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V41R-A24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

WRCUF CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REA	RED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
24	11	TRIP				5	.110	.031	4.875E 05	2.663E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREREND	ROLL-MODEL	YAW
7.96	212.1	1266	29.91	.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SREF (H= .040 FT)
93.0	.023	1.007	3752	2.057E-05	7.088E-08	1.031E 06	1.422E-02	2.051E-02

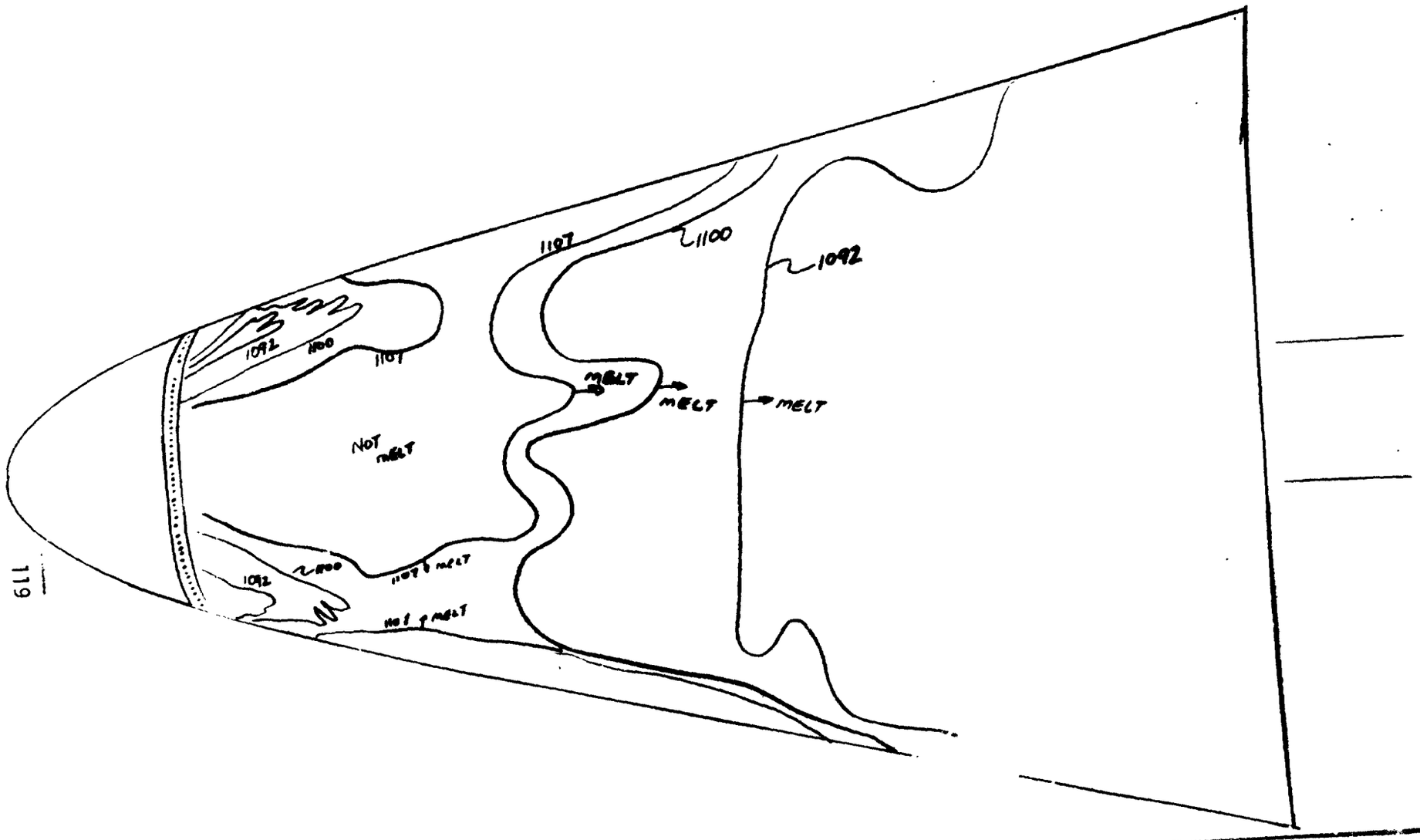
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACIR)	TRAN(TO)	BETA(TO)
(DF(T)	388					
SILE(S)	383	250	87	.0617	2.267E-01	2.460E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1058(250)	42.62	41.11	2.388E-03	.1680	3.025E-03	.1845	2.978E-03	.1804	3.811E-03
5	2509(250)	42.62	41.11	2.388E-03	.1680	3.025E-03	.1845	2.978E-03	.1804	3.811E-03
1	1059(250)	43.67	42.16	2.338E-03	.1641	2.987E-03	.1841	2.884E-03	.1741	3.763E-03
5	2510(250)	43.67	42.16	2.338E-03	.1641	2.987E-03	.1841	2.884E-03	.1741	3.763E-03
1	1060(250)	44.14	43.23	2.306E-03	.1623	2.950E-03	.1818	2.853E-03	.1759	3.716E-03
5	2511(250)	44.14	43.23	2.306E-03	.1623	2.950E-03	.1818	2.853E-03	.1759	3.716E-03
1	1061(250)	45.00	44.25	2.248E-03	.1606	2.914E-03	.1797	2.814E-03	.1738	3.672E-03
1	1062(250)	46.31	45.31	2.248E-03	.1606	2.914E-03	.1796	2.814E-03	.1737	3.671E-03
5	2513(250)	46.27	45.34	2.256E-03	.1596	2.880E-03	.1775	2.785E-03	.1717	3.628E-03
1	1063(250)	47.35	46.44	2.228E-03	.1593	2.880E-03	.1775	2.785E-03	.1717	3.628E-03
5	2514(250)	47.35	46.44	2.228E-03	.1593	2.846E-03	.1754	2.753E-03	.1697	3.586E-03
1	1064(250)	48.40	47.49	2.203E-03	.1573	2.814E-03	.1735	2.722E-03	.1678	3.546E-03
5	2515(250)	48.40	47.49	2.203E-03	.1573	2.814E-03	.1735	2.722E-03	.1678	3.546E-03
		48.60		MODEL WAS LEFT CENTERLINE						
1	1065(250)	49.48	48.57	2.179E-03	.1553	2.783E-03	.1716	2.692E-03	.1659	3.506E-03
5	2516(250)	49.48	48.57	2.179E-03	.1553	2.783E-03	.1716	2.692E-03	.1659	3.506E-03
1	1066(250)	50.55	49.64	2.155E-03	.1528	2.753E-03	.1697	2.663E-03	.1641	3.468E-03
5	2517(250)	50.55	49.64	2.155E-03	.1528	2.753E-03	.1697	2.663E-03	.1641	3.468E-03
1	1067(250)	51.60	50.69	2.132E-03	.1515	2.724E-03	.1679	2.635E-03	.1624	3.432E-03
5	2518(250)	51.60	50.69	2.132E-03	.1515	2.724E-03	.1679	2.635E-03	.1624	3.432E-03

388 $\alpha = 40°$ 1073 1st T. FULL ON ℄

GRP 25 210 PSIA $T_{PC} = 300°F$

815°F



V41H-A2A

WHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
25	11	TRIP				5	.110	.031	4.847E 05	2.647E 03

MACH NO	P0(PSIA)	T0(DEG F)	ALPHA-MODEL	ALPHA-SFC	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	212.1	1271	39.95	-9.95	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .060 FT)	STREF (R= .060 FT)
93.4	.023	1.007	3760	2.365E-05	7.518E-08	1.025E 06	1.623E-02	2.057E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAC/AK)	THAW(TO)	BETA(TO)
SILF(S)	308					
SG	383	400	83	.0636	2.982E-01	3.6947E-01

PIC NO	TIME	DELTIME	H(TO)	H(TO)/RHEF	H(.9TO)	H(.9TO)/RHEF	H(.936TO)	H(.936TO)/RHEF	ST(TO)
I 1070(400)	1.50		MODEL HAS NOT REACHED CENTERLINE						
S 2821(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
IN-FCT TIME =		1.65							
I 1071(400)	2.57	1.65	1.791E-02	1.0566	2.281E-02	1.3958	2.048E-02	1.2616	2.784E-02
S 2822(300)	2.57	1.65	1.791E-02	1.0566	2.281E-02	1.3958	2.048E-02	1.2616	2.784E-02
I 1072(400)	3.62	2.72	1.357E-02	.8334	1.767E-02	1.0843	1.600E-02	.9858	2.175E-02
S 2823(300)	3.62	2.72	1.357E-02	.8334	1.767E-02	1.0843	1.600E-02	.9858	2.175E-02
SG		3.63							
I 1073(400)	4.70	3.78	1.146E-02	.7047	1.494E-02	.9202	1.353E-02	.8335	1.839E-02
S 2824(300)	4.70	3.78	1.146E-02	.7047	1.494E-02	.9202	1.353E-02	.8335	1.839E-02
I 1074(400)	5.78	4.85	1.004E-02	.6216	1.318E-02	.8117	1.194E-02	.7353	1.622E-02
S 2825(300)	5.78	4.85	1.004E-02	.6214	1.318E-02	.8117	1.194E-02	.7353	1.622E-02
I 1075(400)	6.83	5.90	9.149E-03	.5636	1.195E-02	.7359	1.082E-02	.6666	1.471E-02
S 2826(300)	6.83	5.90	9.149E-03	.5636	1.195E-02	.7359	1.082E-02	.6666	1.471E-02
I 1076(400)	7.90	6.98	8.413E-03	.5183	1.099E-02	.6768	9.952E-03	.6131	1.353E-02
S 2827(300)	7.90	6.98	8.413E-03	.5183	1.099E-02	.6768	9.952E-03	.6131	1.353E-02
I 1077(400)	8.98	8.06	7.831E-03	.4826	1.023E-02	.6300	9.263E-03	.5706	1.259E-02
S 2828(300)	8.98	8.06	7.831E-03	.4826	1.023E-02	.6300	9.263E-03	.5706	1.259E-02
I 1078(400)	10.03	9.11	7.305E-03	.4537	9.613E-03	.5925	8.712E-03	.5367	1.184E-02
S 2829(300)	10.03	9.11	7.305E-03	.4537	9.613E-03	.5925	8.712E-03	.5367	1.184E-02
I 1079(400)	11.08	10.16	6.974E-03	.4296	9.107E-03	.5610	8.249E-03	.5082	1.121E-02
S 2830(300)	11.08	10.16	6.974E-03	.4296	9.107E-03	.5610	8.249E-03	.5082	1.121E-02
I 1080(400)	12.16	11.23	6.631E-03	.4085	8.660E-03	.5335	7.844E-03	.4832	1.066E-02
S 2831(300)	12.16	11.23	6.631E-03	.4085	8.660E-03	.5335	7.844E-03	.4832	1.066E-02
I 1081(400)	13.23	12.31	6.335E-03	.3902	8.272E-03	.5096	7.493E-03	.4616	1.018E-02
S 2832(300)	13.23	12.31	6.335E-03	.3902	8.272E-03	.5096	7.493E-03	.4616	1.018E-02

WNCOR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	NEU
25	11	TRIP				5	.110	.031	4.047E 05	2.047E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	232.1	1271	39.95	-0.95	40.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (NO .040 FT)	SIMEF (NO .040 FT)
93.6	.023	1.047	3760	2.345E-05	7.518E-08	1.025E 06	1.023E-02	2.057E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE WIDTH (WHGACAR)	TRANS(TO)	BETA(TO)
TOP(T)	308					
SIDE(S)	283	300	83	.0536	2.982E-01	3.6467E-01
56						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.9TO)	M(.9TO)/MREF	M(.934TO)	M(.934TO)/MREF	ST(TO)
1	1082(300)	14.29	13.34	6.0415E-03	.3766	7.9605E-03	.4961	7.193E-03	.4481	9.776E-03
2	2833( )	14.29	13.36	6.0415E-03	.3766	7.9605E-03	.4961	7.193E-03	.4481	9.776E-03
1	1083	15.36	14.44	5.8505E-03	.3603	7.6396E-03	.4706	6.914E-03	.4262	9.405E-03
2	2834( )	15.36	14.44	5.8505E-03	.3603	7.6396E-03	.4706	6.914E-03	.4262	9.405E-03
1	1084(300)	16.44	15.51	5.6635E-03	.3476	7.3896E-03	.4539	6.675E-03	.4112	9.073E-03
2	2835(300)	16.44	15.51	5.6635E-03	.3476	7.3896E-03	.4539	6.675E-03	.4112	9.073E-03
1	1085(300)	17.49	16.57	5.4815E-03	.3346	7.1316E-03	.4393	6.440E-03	.3970	8.700E-03
2	2836(300)	17.49	16.57	5.4815E-03	.3346	7.1316E-03	.4393	6.440E-03	.3970	8.700E-03
1	1086(300)	18.57	17.66	5.2925E-03	.3230	6.9106E-03	.4257	6.206E-03	.3826	8.404E-03
2	2837(300)	18.57	17.66	5.2925E-03	.3230	6.9106E-03	.4257	6.206E-03	.3826	8.404E-03
1	1087(300)	19.62	18.66	5.1181E-03	.3107	6.7136E-03	.4135	6.001E-03	.3696	8.265E-03
2	2838(300)	19.62	18.66	5.1181E-03	.3107	6.7136E-03	.4135	6.001E-03	.3696	8.265E-03
1	1088(300)	20.69	19.77	4.9495E-03	.3079	6.5285E-03	.4021	5.813E-03	.3463	8.037E-03
2	2839(300)	20.69	19.77	4.9495E-03	.3079	6.5285E-03	.4021	5.813E-03	.3463	8.037E-03
1	1089(300)	21.77	20.85	4.8085E-03	.2999	6.3576E-03	.3916	5.754E-03	.3547	7.827E-03
2	2840(300)	21.77	20.85	4.8085E-03	.2999	6.3576E-03	.3916	5.754E-03	.3547	7.827E-03
1	1090(300)	22.82	21.90	4.7505E-03	.2926	6.2076E-03	.3821	5.614E-03	.3461	7.637E-03
2	2841(300)	22.82	21.90	4.7505E-03	.2926	6.2076E-03	.3821	5.614E-03	.3461	7.637E-03
1	1091(300)	23.90	22.97	4.6377E-03	.2857	6.0506E-03	.3730	5.485E-03	.3379	7.456E-03
2	2842(300)	23.90	22.97	4.6377E-03	.2857	6.0506E-03	.3730	5.485E-03	.3379	7.456E-03
1	1092(300)	24.95	24.02	4.5155E-03	.2793	5.9225E-03	.3654	5.364E-03	.3304	7.291E-03
2	2843(300)	24.97	24.05	4.5325E-03	.2792	5.9195E-03	.3646	5.361E-03	.3303	7.287E-03
1	1093(300)	26.02	25.10	4.4195E-03	.2733	5.7436E-03	.3549	5.248E-03	.3233	7.133E-03
2	2844(300)	26.02	25.10	4.4195E-03	.2733	5.7436E-03	.3549	5.248E-03	.3233	7.133E-03
1	1094(300)	27.10	26.18	4.3445E-03	.2676	5.6736E-03	.3495	5.134E-03	.3166	6.985E-03
2	2845(300)	27.10	26.18	4.3445E-03	.2676	5.6736E-03	.3495	5.134E-03	.3166	6.985E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
25	11	1R1P				5	.110	.031	4.047E 05	2.047E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.94	212.1	1271	39.95	-9.95	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (R= .040 FT)	STREF (R= .040 FT)
93.4	.023	1.037	3760	2.065E-05	7.51RE-08	1.025E 05	1.023E-02	2.657E-02

CAPPA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOKCKEA)	TRAN(TO)	BETA(TO)
0	384					
31E(S)	383	300	93	.0636	2.482E-01	3.4947E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	1095(300)	24.15	27.23	4.260E-03	.2624	5.562E-03	.3427	5.036E-03	.3104	6.040E-03
5	2564(300)	24.15	27.23	4.260E-03	.2624	5.562E-03	.3427	5.036E-03	.3104	6.040E-03
1	1096(300)	24.23	24.31	4.178E-03	.2574	5.456E-03	.3361	4.942E-03	.3044	6.717E-03
5	2547(300)	24.23	24.31	4.178E-03	.2574	5.456E-03	.3361	4.942E-03	.3044	6.717E-03
1	1097(300)	24.30	24.38	4.115E-03	.2526	5.355E-03	.3299	4.851E-03	.2988	6.593E-03
5	2548(300)	24.30	24.38	4.115E-03	.2526	5.355E-03	.3299	4.851E-03	.2988	6.593E-03
1	1098(300)	31.36	31.43	4.024E-03	.2482	5.261E-03	.3241	4.766E-03	.2936	6.470E-03
5	2549(300)	31.36	31.43	4.024E-03	.2482	5.261E-03	.3241	4.766E-03	.2936	6.470E-03
1	1099(300)	32.43	31.51	3.960E-03	.2439	5.171E-03	.3185	4.684E-03	.2885	6.366E-03
5	2550(300)	32.43	31.51	3.960E-03	.2439	5.171E-03	.3185	4.684E-03	.2885	6.366E-03
1	1100(300)	33.51	32.58	3.894E-03	.2399	5.085E-03	.3132	4.606E-03	.2837	6.260E-03
5	2551(300)	33.51	32.58	3.894E-03	.2399	5.085E-03	.3132	4.606E-03	.2837	6.260E-03
1	1101(300)	34.58	33.63	3.832E-03	.2361	5.005E-03	.3083	4.533E-03	.2793	6.162E-03
5	2552(300)	34.58	33.63	3.832E-03	.2361	5.005E-03	.3083	4.533E-03	.2793	6.162E-03
1	1102(300)	35.64	34.71	3.773E-03	.2324	4.926E-03	.3035	4.463E-03	.2749	6.065E-03
5	2553(300)	35.64	34.71	3.773E-03	.2324	4.926E-03	.3035	4.463E-03	.2749	6.065E-03
1	1103(300)	36.69	35.76	3.717E-03	.2290	4.853E-03	.2990	4.396E-03	.2708	5.976E-03
5	2554(300)	36.69	35.76	3.717E-03	.2290	4.853E-03	.2990	4.396E-03	.2708	5.976E-03
		37.69		MODEL HAS LEFT CENTERLINE						
1	1104(300)	37.76	36.84	3.662E-03	.2[illegible]	4.782E-03	.2946	4.332E-03	.2668	5.888E-03
5	2555(300)	37.76	36.84	3.662E-03	.22[illegible]	4.782E-03	.2946	4.332E-03	.2668	5.888E-03
1	1105(300)	38.84	37.91	3.610E-03	.22[illegible]	4.714E-03	.2904	4.270E-03	.2630	5.804E-03
5	2556(300)	38.84	37.91	3.610E-03	.2224	4.714E-03	.2904	4.270E-03	.2630	5.804E-03
1	1106(300)	39.89	38.97	3.561E-03	.2193	4.650E-03	.2864	4.212E-03	.2595	5.725E-03
5	2557(300)	39.89	38.97	3.561E-03	.2193	4.650E-03	.2864	4.212E-03	.2595	5.725E-03

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VAIN-R20 VON KARMAN GAS DYNAMICS FACILITY
40 INCH HYPERSONIC TUNNEL H

WHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
25	11	TRIP				3	.110	.091	6.047E 05	2.047E 03

MACH NO	PO(PSIA)	TO(DEG K)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-FREEND	ROLL-MODEL	YAW
7.94	212.1	1271	39.95	-9.95	32.00	0	0

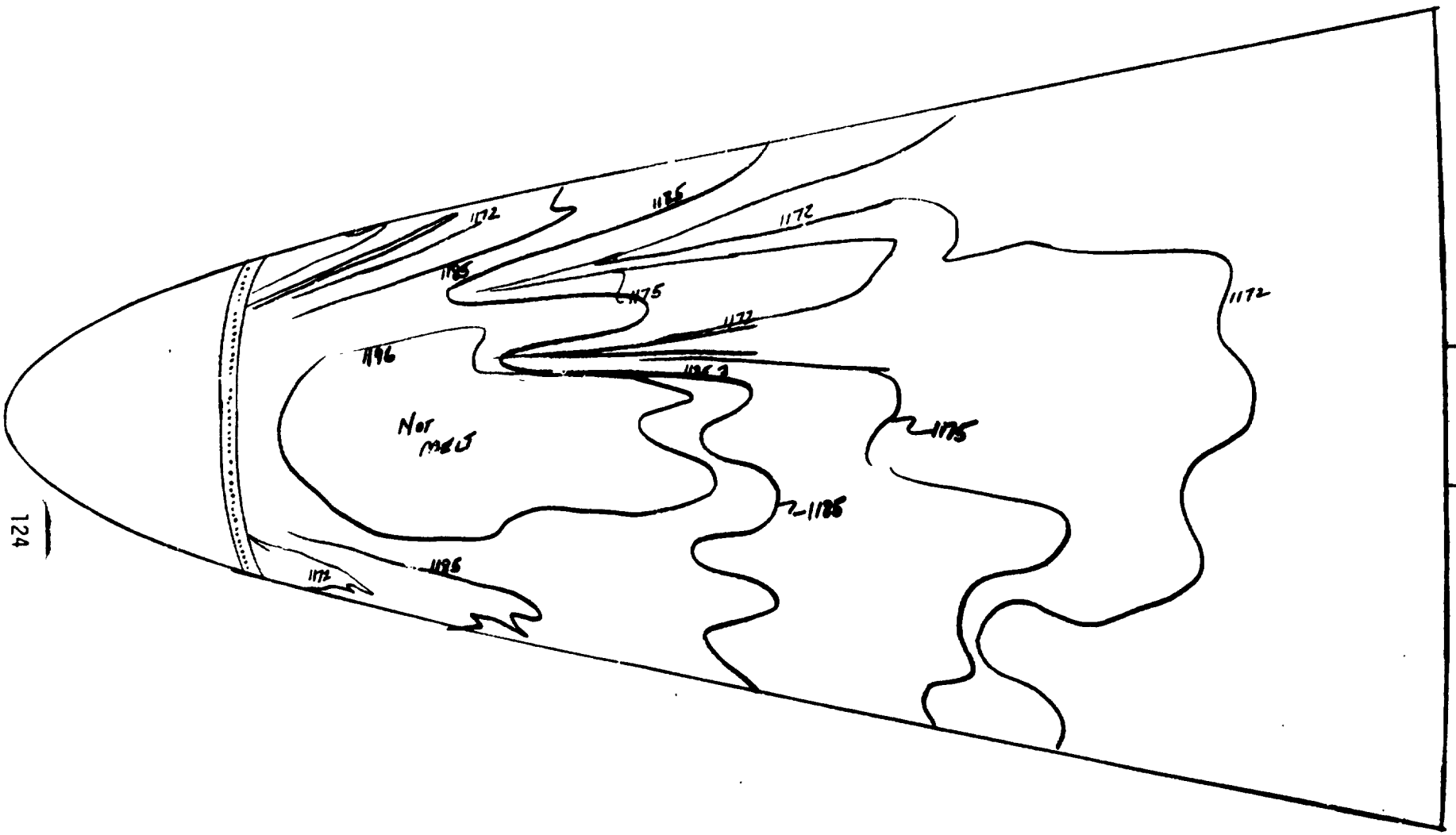
T-INF (DEG K)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH= .060 FT)	DINEF (RH= .060 FT)
93.6	.023	1.007	3760	2.049E-05	7.518E-08	1.025E 06	1.423E-02	2.657E-02

CAPPHA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUCAPA)	TAAW(TO)	BETA(TO)
10P(T)	308					
SIDE(S)	2P3	890	82	.0636	2.982E-01	3.6947E-01
50						

PIC NO	TIME DELTIME	M(TO)	M(TO)/MREF	M(.9TC)	M(.9TC)/MREF	M(.93*TO)	M(.93*TO)/MREF	ST(TO)

388 $\alpha = 30°$ 111-3 1ST FR ON ℄

GRP 26 320 PSIA
820°F $T_{PC} = 250°F$



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V419-424 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GRCUS	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REF	REQ
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
26	11	TRIP				5	.110	.091	7.179E 05	3.921E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	320.5	1282	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (IN .040 FT)	STREF (IN .040 FT)
93.6	.036	1.514	3777	3.034E-05	7.552E-09	1.519E 06	1.988E-02	2.196E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
SIDE(S)	3RR					
36	303	250	93	.0017	2.259E-01	2.449E-01

	PTC NO	TIME	DELTIME	H(0)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1160(250)	1.07		MODEL HAS NOT REACHED CENTERLINE						
2	2511(250)	1.07		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.02								
1	1161(250)	2.55	1.44	1.1416E-02	.5442	1.502E-02	.7158	1.453E-02	.731	1.279E-02
2	2512(250)	2.55	1.44	1.1416E-02	.5442	1.502E-02	.7158	1.453E-02	.7310	1.279E-02
1	1162(250)	3.02	2.71	9.174E-03	.4416	1.167E-02	.5871	1.124E-02	.5678	9.937E-03
2	2513(250)	3.02	2.71	9.174E-03	.4416	1.167E-02	.5871	1.124E-02	.5678	9.937E-03
36		3.87								
1	1163(250)	4.87	3.76	7.748E-03	.3913	9.937E-03	.4984	9.581E-03	.4820	8.436E-03
2	2514(250)	4.87	3.76	7.748E-03	.3913	9.937E-03	.4984	9.581E-03	.4820	8.436E-03
1	1164(250)	5.75	4.84	6.804E-03	.3654	8.737E-03	.4395	8.444E-03	.4251	7.439E-03
2	2515(250)	5.75	4.84	6.804E-03	.3654	8.737E-03	.4395	8.444E-03	.4251	7.439E-03
1	1165(250)	6.63	5.92	6.213E-03	.4126	7.962E-03	.3876	7.642E-03	.3845	6.729E-03
2	2516(250)	6.63	5.92	6.213E-03	.3126	7.962E-03	.3876	7.642E-03	.3845	6.729E-03
1	1166(250)	7.68	6.97	5.725E-03	.2880	7.282E-03	.3643	7.042E-03	.3543	6.201E-03
2	2517(250)	7.68	6.97	5.725E-03	.2880	7.282E-03	.3643	7.042E-03	.3543	6.201E-03
1	1167(250)	8.55	8.04	5.372E-03	.2681	6.777E-03	.3410	6.554E-03	.3297	5.771E-03
2	2518(250)	8.55	8.04	5.372E-03	.2681	6.777E-03	.3410	6.554E-03	.3297	5.771E-03
1	1168(250)	10.01	9.1	5.011E-03	.2521	6.373E-03	.3206	6.164E-03	.3101	5.427E-03
2	2519(250)	10.01	9.1	5.011E-03	.2521	6.373E-03	.3206	6.164E-03	.3101	5.427E-03
1	1169(250)	11.46	10.18	4.704E-03	.2387	6.034E-03	.3036	5.836E-03	.2936	5.138E-03
2	2520(250)	11.46	10.18	4.704E-03	.2387	6.034E-03	.3036	5.836E-03	.2936	5.138E-03
1	1170(250)	12.13	11.22	4.511E-03	.2266	5.738E-03	.2887	5.5[illegible]E-03	.2792	4.886E-03
2	2521(250)	12.13	11.22	4.511E-03	.2266	5.738E-03	.2887	5.549E-03	.2792	4.886E-03
1	1171(250)	13.21	12.31	4.304E-03	.2164	5.481E-03	.2757	5.301E-03	.2667	4.667E-03
2	2522(250)	13.21	12.31	4.304E-03	.2164	5.481E-03	.2757	5.301E-03	.2667	4.667E-03

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V41R-H2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL 9

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WHCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	REO
26	11	TRIM				5	.110	.031	7.179E 05	3.921E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.40	320.5	1282	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .040 FT)	SIREF (R= .040 FT)
93.8	.036	1.516	3777	3.034E-05	7.552E-08	1.518E 06	1.488E-02	2.186E-02

LAMPEA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAR)	TRAN(TO)	BETA(TO)
IOP(T)	384					
SICE(S)	383	250	93	.0017	2.259E-01	2.449E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
>	2923(256)	14.28	14.35	4.146E-03	.2081	5.261E-03	.2647	5.088E-03	.2560	4.480E-03
I	1172(256)	14.29	14.38	4.132E-03	.2079	5.254E-03	.2644	5.093E-03	.2557	4.475E-03
I	1173(256)	15.34	14.03	4.079E-03	.2002	5.061E-03	.2546	4.894E-03	.2462	4.309E-03
>	2924(256)	15.34	14.03	3.979E-03	.2002	5.061E-03	.2546	4.894E-03	.2462	4.309E-03
I	1174(256)	16.39	15.08	3.861E-03	.1933	4.886E-03	.2454	4.725E-03	.2377	4.160E-03
>	2925(256)	16.39	15.08	3.861E-03	.1933	4.886E-03	.2454	4.725E-03	.2377	4.160E-03
I	1175(256)	17.06	15.55	3.716E-03	.1869	4.726E-03	.2377	4.564E-03	.2299	4.023E-03
>	2926(256)	17.06	15.55	3.714E-03	.1868	4.724E-03	.2377	4.564E-03	.2299	4.023E-03
I	1176(256)	18.56	17.03	3.549E-03	.1811	4.578E-03	.2303	4.427E-03	.2227	3.898E-03
>	2927(256)	18.56	17.03	3.549E-03	.1811	4.578E-03	.2303	4.427E-03	.2227	3.898E-03
I	1177(256)	19.59	18.06	3.448E-03	.1759	4.447E-03	.2237	4.301E-03	.2166	3.787E-03
>	2928(256)	19.59	18.06	3.448E-03	.1759	4.447E-03	.2237	4.301E-03	.2166	3.787E-03
>	2929(256)	20.64	19.11	3.342E-03	.1712	4.327E-03	.2177	4.185E-03	.2105	3.685E-03
I	1178(256)	20.67	19.14	3.340E-03	.1710	4.324E-03	.2176	4.182E-03	.2104	3.682E-03
I	1179(256)	21.72	20.41	3.313E-03	.1667	4.214E-03	.2120	4.075E-03	.2050	3.588E-03
>	2930(256)	21.72	20.41	3.313E-03	.1667	4.214E-03	.2120	4.075E-03	.2050	3.588E-03
I	1180(256)	22.80	21.49	3.230E-03	.1625	4.109E-03	.2067	3.974E-03	.1999	3.499E-03
>	2931(256)	22.80	21.49	3.230E-03	.1625	4.109E-03	.2067	3.974E-03	.1999	3.499E-03
I	1181(256)	23.87	22.96	3.156E-03	.1587	4.011E-03	.2018	3.874E-03	.1952	3.416E-03
>	2932(256)	23.87	22.96	3.156E-03	.1587	4.011E-03	.2018	3.874E-03	.1952	3.416E-03
I	1182(256)	24.95	24.04	3.082E-03	.1551	3.921E-03	.1972	3.792E-03	.1908	3.338E-03
>	2933(256)	24.95	24.04	3.082E-03	.1551	3.921E-03	.1972	3.792E-03	.1908	3.338E-03
I	1183(256)	26.00	25.09	3.017E-03	.1518	3.838E-03	.1931	3.711E-03	.1867	3.268E-03
>	2934(256)	26.00	25.09	3.017E-03	.1518	3.838E-03	.1931	3.711E-03	.1867	3.268E-03
I	1184(256)	27.05	26.14	2.956E-03	.1487	3.760E-03	.1891	3.636E-03	.1829	3.201E-03
>	2935(256)	27.05	26.14	2.956E-03	.1487	3.760E-03	.1891	3.636E-03	.1829	3.201E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
26	11	TRIP				5	.110	.031	7.179E 05	3.921E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCN	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	320.5	1202	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SINEF (RE .040 FT)
93.0	.034	1.534	3777	3.034E-05	7.552E-08	1.518E 05	1.989E-02	2.146E-02

CAPERA	ROLL NO	PLATE TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAR)	TRAN(TO)	BETA(TO)
106(T)	288					
5ILF(5)	283	250	83	.0617	2.259E-01	2.4493E-01
5G						

	PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1185(250)	24.13	27.22	2.847E-03	.1457	3.048E-03	.1556	3.563E-03	.1793	3.137E-03
5	2536(250)	24.13	27.22	2.847E-03	.1457	3.048E-03	.1556	3.563E-03	.1793	3.137E-03
1	1186(250)	24.20	27.29	2.801E-03	.1429	3.014E-03	.1518	3.495E-03	.1758	3.077E-03
5	2537(250)	24.20	27.29	2.801E-03	.1429	3.014E-03	.1518	3.495E-03	.1758	3.077E-03
1	1187(250)	30.25	27.34	2.740E-03	.1406	3.048E-03	.1745	3.432E-03	.1727	3.022E-03
5	2538(250)	30.25	27.34	2.740E-03	.1406	3.048E-03	.1745	3.432E-03	.1727	3.022E-03
1	1188(250)	31.33	30.42	2.705E-03	.1378	3.005E-03	.1743	3.371E-03	.1696	2.968E-03
5	2539(250)	31.33	30.42	2.705E-03	.1378	3.005E-03	.1743	3.371E-03	.1696	2.968E-03
1	1189(250)	32.38	31.47	2.694E-03	.1355	3.026E-03	.1724	3.314E-03	.1667	2.918E-03
5	2540(250)	32.38	31.47	2.694E-03	.1355	3.026E-03	.1724	3.314E-03	.1667	2.918E-03
1	1190(250)	33.46	32.55	2.664E-03	.1333	3.369E-03	.1695	3.258E-03	.1639	2.869E-03
5	2541(250)	33.46	32.55	2.664E-03	.1333	3.369E-03	.1695	3.258E-03	.1639	2.869E-03
1	1191(250)	34.53	33.62	2.606E-03	.1311	3.315E-03	.1668	3.206E-03	.1613	2.823E-03
5	2542(250)	34.53	33.62	2.606E-03	.1311	3.315E-03	.1668	3.206E-03	.1613	2.823E-03
1	1192(250)	35.59	34.68	2.566E-03	.1291	3.264E-03	.1642	3.157E-03	.1588	2.780E-03
5	2543(250)	35.59	34.68	2.566E-03	.1291	3.264E-03	.1642	3.157E-03	.1588	2.780E-03
1	1193(250)	36.66	35.75	2.527E-03	.1272	3.215E-03	.1617	3.109E-03	.1564	2.737E-03
5	2544(250)	36.65	35.75	2.527E-03	.1272	3.215E-03	.1617	3.109E-03	.1564	2.737E-03
		36.56	MODEL HAS LEFT CENTERLINE							
1	1194(250)	37.74	36.83	2.490E-03	.1253	3.167E-03	.1594	3.063E-03	.1541	2.697E-03
5	2545(250)	37.74	36.83	2.490E-03	.1253	3.167E-03	.1594	3.063E-03	.1541	2.697E-03
1	1195(250)	38.81	37.90	2.455E-03	.1235	3.122E-03	.1571	3.019E-03	.1519	2.659E-03
5	2546(250)	38.81	37.90	2.455E-03	.1235	3.122E-03	.1571	3.019E-03	.1519	2.659E-03
1	1196(250)	39.87	38.96	2.421E-03	.1218	3.080E-03	.1549	2.976E-03	.1498	2.622E-03
5	2547(250)	39.87	38.96	2.421E-03	.1218	3.080E-03	.1549	2.976E-03	.1498	2.622E-03

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VON KARMAN GAS DYNAMICS FACILITY

9414-824 50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	INJP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
26	11	INJP				S	.110	.031	7.179E 05	3.921E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRENEND	ROLL-MODEL	YAW
7.46	320.5	1282	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUG/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (R= .040 FT)	SREF (R= .040 FT)
93.8	.034	1.5[illegible]	3777	7.934E-05	7.552E-08	1.5[illegible]E 04	1.98[illegible]E-02	2.1[illegible]6E-02

CAPERA (DEG T)	WALL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
	308					
SILE(S)	303	250	83	.0417	2.259E-01	2.4493E-01
36						

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)

320

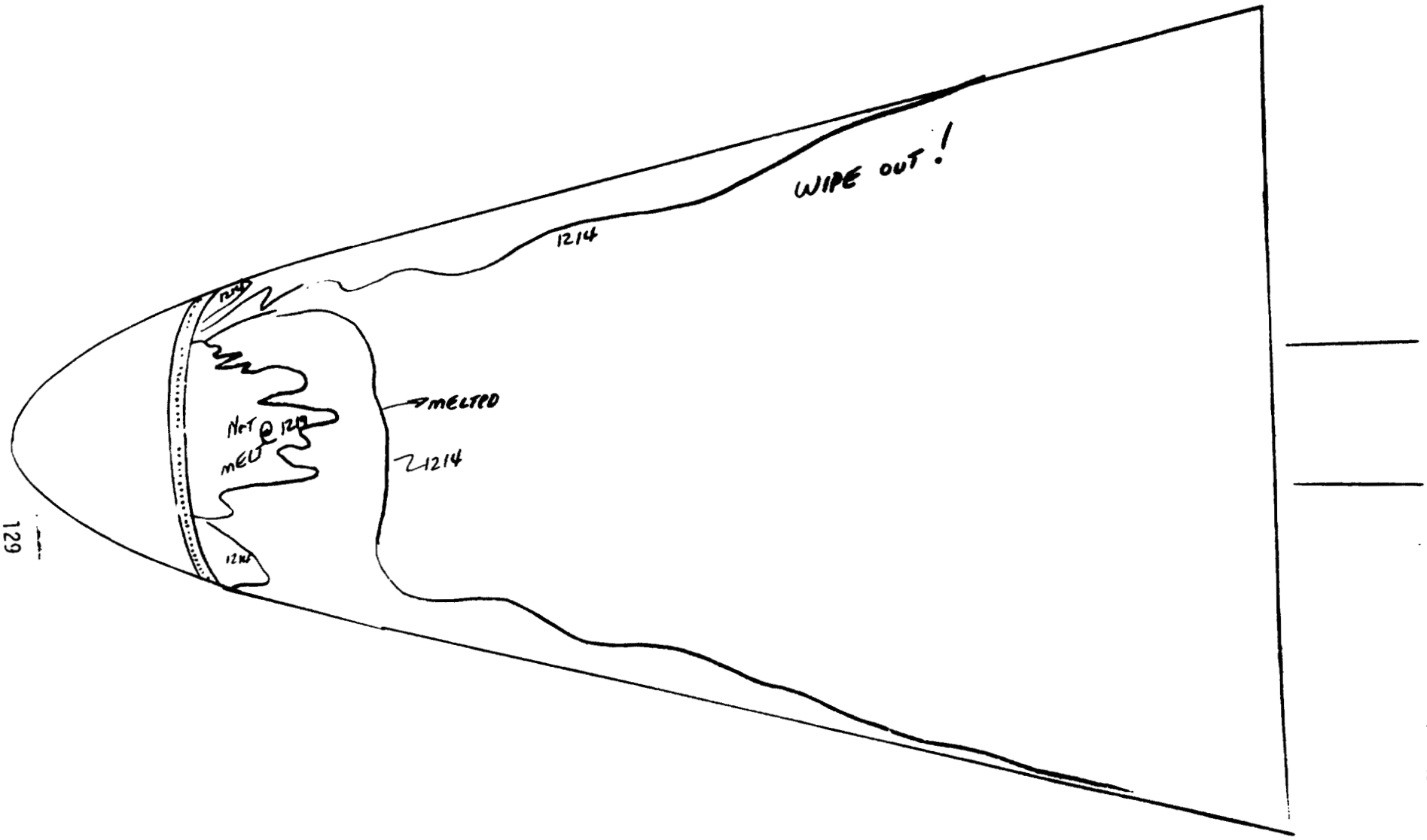
GRD 27

$\alpha = 40°$

320 PSIA
830 °F

$T_{PC} = 300°F$

1202 1st Fe ℄



NASA-RI OH 54

V41H-H20

AEDC(ARO.INC.) ARNOLD AFS.TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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RRCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
27	11	TRIP				S	.110	.031	7.168E 05	3.915E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	321.1	1285	34.96	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (R= .040 FT)	STREF (R= .040 FT)
94.0	.034	1.537	3782	3.033E-05	7.586E-08	1.515E 06	1.990E-02	2.187E-02

CAPFFA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCXCAR)	TRAR(TO)	RETA(TO)
IOF(T)	284					
SIEF(S)	283	300	83	.3636	2.423E-01	3.403BE-01
SG						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	1199(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
S	2550(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.67							
I	1200(300)	2.57	1.63	1.6[illegible]E-02	.4509	2.201E-02	1.1059	1.998E-02	1.0036	1.828E-02
S	2551(300)	2.57	1.63	1.6[illegible]E-02	.4509	2.201E-02	1.1059	1.998E-02	1.0036	1.828E-02
I	1201(300)	3.65	2.71	1.315E-02	.6607	1.709E-02	.8587	1.551E-02	.7793	1.419E-02
S	2552(300)	3.65	2.71	1.315E-02	.6607	1.709E-02	.8587	1.551E-02	.7793	1.419E-02
SG			3.43							
I	1202(300)	4.70	3.76	1.118E-02	.5608	1.451E-02	.7288	1.317E-02	.6615	1.205E-02
S	2553(300)	4.70	3.76	1.118E-02	.5608	1.451E-02	.7288	1.317E-02	.6615	1.205E-02
I	1203(300)	5.78	4.84	9.8[illegible]2E-03	.4945	1.279E-02	.6427	1.161E-02	.5833	1.062E-02
S	2554(300)	5.78	4.84	9.8[illegible]2E-03	.4945	1.279E-02	.6427	1.161E-02	.5833	1.062E-02
I	1204(300)	6.83	5.89	8.921E-03	.4482	1.159E-02	.5825	1.052E-02	.5287	9.627E-03
S	2555(300)	6.83	5.89	8.921E-03	.4482	1.159E-02	.5825	1.052E-02	.5287	9.627E-03
I	1205(300)	7.90	6.97	8.203E-03	.4121	1.066E-02	.5357	9.675E-03	.4861	8.852E-03
S	2556(300)	7.90	6.97	8.203E-03	.4121	1.066E-02	.5357	9.675E-03	.4861	8.852E-03
I	1206(300)	8.98	8.04	7.636E-03	.3836	9.922E-03	.4985	9.005E-03	.4524	8.238E-03
S	2557(300)	8.98	8.04	7.636E-03	.3836	9.922E-03	.4985	9.005E-03	.4524	8.238E-03
I	1207(300)	10.03	9.09	7.174E-03	.3607	9.331E-03	.4688	8.468E-03	.4255	7.748E-03
S	2558(300)	10.03	9.09	7.174E-03	.3607	9.331E-03	.4688	8.468E-03	.4255	7.748E-03
I	1208(300)	11.08	10.14	6.797E-03	.3415	8.834E-03	.4439	8.017E-03	.4028	7.335E-03
S	2559(300)	11.08	10.14	6.797E-03	.3415	8.834E-03	.4439	8.017E-03	.4028	7.335E-03
I	1209(300)	12.16	11.22	6.463E-03	.3247	8.400E-03	.4220	7.623E-03	.3830	6.975E-03
S	2560(300)	12.16	11.22	6.463E-03	.3247	8.400E-03	.4220	7.623E-03	.3830	6.975E-03
I	1210(300)	13.21	12.27	6.140E-03	.3105	8.032E-03	.4036	7.284E-03	.3662	6.669E-03
S	2561(300)	13.21	12.27	6.140E-03	.3105	8.032E-03	.4036	7.284E-03	.3662	6.669E-03

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V414-828 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

WRCUR	CINFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REH	RED
27	11	TRIP				>	.110	.031	7.160E 05	3.915E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.1	1205	34.94	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	SINREF (RE .040 FT)
94.0	.036	1.517	3742	3.033E-05	7.504E-08	1.515E 06	1.990E-02	.107E-02

LAPELLA (OF(T) >ICE(S >6	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RRCACAR)	TBAR(TO)	BETA(TO)
	288					
	383	300	83	.0636	2.923E-01	3.4038E-01

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1281(300)	14.26	13.32	5.941E-03	.2980	7.709E-03	.3873	6.995E-03	.3515	6.401E-03
>2962(300)	14.26	13.32	5.941E-03	.2980	7.709E-03	.3873	6.995E-03	.3515	6.401E-03
1282(300)	15.34	14.40	5.705E-03	.2866	7.415E-03	.3726	6.724E-03	.3381	6.157E-03
>2963(300)	15.34	14.40	5.705E-03	.2866	7.415E-03	.3726	6.724E-03	.3381	6.157E-03
1283(300)	16.41	15.47	5.589E-03	.2765	7.153E-03	.3594	6.491E-03	.3261	5.939E-03
>2964(300)	16.41	15.47	5.589E-03	.2765	7.153E-03	.3594	6.491E-03	.3261	5.939E-03
1284(300)	17.46	16.53	5.325E-03	.2674	6.921E-03	.3477	6.281E-03	.3156	5.747E-03
>2965(300)	17.46	16.53	5.325E-03	.2674	6.921E-03	.3477	6.281E-03	.3156	5.747E-03
1285(300)	18.54	17.60	5.160E-03	.2592	6.708E-03	.3369	6.086E-03	.3058	5.568E-03
>2966(300)	18.54	17.60	5.160E-03	.2592	6.708E-03	.3369	6.086E-03	.3058	5.568E-03
1286(300)	19.62	18.68	5.009E-03	.2517	6.510E-03	.3271	5.908E-03	.2968	5.406E-03
>2967(300)	19.62	18.68	5.009E-03	.2517	6.510E-03	.3271	5.908E-03	.2968	5.406E-03
1287(300)	20.67	19.73	4.874E-03	.2449	6.334E-03	.3183	5.749E-03	.2888	5.260E-03
>2968(300)	20.67	19.73	4.874E-03	.2449	6.334E-03	.3183	5.749E-03	.2888	5.260E-03
1288(300)	21.74	20.81	4.746E-03	.2384	6.168E-03	.3099	5.598E-03	.2813	5.122E-03
>2969(300)	21.74	20.81	4.746E-03	.2384	6.168E-03	.3099	5.598E-03	.2813	5.122E-03
1289(300)	22.80	21.86	4.630E-03	.2326	6.018E-03	.3024	5.462E-03	.2744	4.997E-03
>2970(300)	22.80	21.86	4.630E-03	.2326	6.018E-03	.3024	5.462E-03	.2744	4.997E-03
1290(300)	23.87	22.93	4.520E-03	.2271	5.875E-03	.2952	5.332E-03	.2679	4.879E-03
>2971(300)	23.87	22.93	4.520E-03	.2271	5.875E-03	.2952	5.332E-03	.2679	4.879E-03
1291(300)	24.95	24.01	4.418E-03	.2220	5.742E-03	.2885	5.211E-03	.2618	4.768E-03
>2972(300)	24.95	24.01	4.418E-03	.2220	5.742E-03	.2885	5.211E-03	.2618	4.768E-03
1292(300)	26.00	25.06	4.324E-03	.2173	5.620E-03	.2824	5.101E-03	.2563	4.667E-03
>2973(300)	26.00	25.06	4.324E-03	.2173	5.620E-03	.2824	5.101E-03	.2563	4.667E-03
	26.80		MODEL HAS LEFT CENTERLINE						

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
27	11	TRIP				5	.110	.031	7.168E 05	3.915E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.1	1285	39.96	-9.96	30.09	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (R= .040 FT)	STREF (R= .040 FT)
94.0	.036	1.517	3782	3.133E-05	7.569E-06	1.515E 06	1.990E-02	2.187E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	HETA(TO)
10F(T)	300					
5ICE(S)	303	300	93	.0636	2.923E-01	3.403E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	1223(300)	27.08	24.14	4.234E-03	.2127	5.504E-03	.2765	4.995E-03	.2509	4.570E-03
S	2576(300)	27.08	24.14	4.234E-03	.2127	5.504E-03	.2765	4.995E-03	.2509	4.570E-03
I	1224(300)	28.13	27.19	4.152E-03	.2086	5.394E-03	.2711	4.897E-03	.2460	4.480E-03
S	2575(300)	28.13	27.19	4.152E-03	.2086	5.394E-03	.2711	4.897E-03	.2460	4.480E-03
S	2576(300)	29.20	28.26	4.072E-03	.2046	5.292E-03	.2659	4.803E-03	.2413	4.394E-03
I	1225(300)	29.23	28.29	4.072E-03	.2045	5.290E-03	.2658	4.801E-03	.2412	4.392E-03
I	1226(300)	30.28	29.34	3.996E-03	.2008	5.194E-03	.2610	4.714E-03	.2368	4.313E-03
S	2577(300)	30.28	29.34	3.996E-03	.2008	5.194E-03	.2610	4.714E-03	.2368	4.313E-03
I	1227(300)	31.33	30.39	3.927E-03	.1973	5.104E-03	.2564	4.632E-03	.2327	4.238E-03
S	2578(300)	31.33	30.39	3.927E-03	.1973	5.104E-03	.2564	4.632E-03	.2327	4.238E-03
I	1228(300)	32.38	31.44	3.861E-03	.1940	5.018E-03	.2521	4.554E-03	.2288	4.166E-03
S	2579(300)	32.38	31.44	3.861E-03	.1940	5.018E-03	.2521	4.554E-03	.2288	4.166E-03
I	1229(300)	33.46	32.52	3.798E-03	.1907	4.936E-03	.2479	4.478E-03	.2250	4.097E-03
S	2580(300)	33.46	32.52	3.798E-03	.1907	4.936E-03	.2479	4.478E-03	.2250	4.097E-03

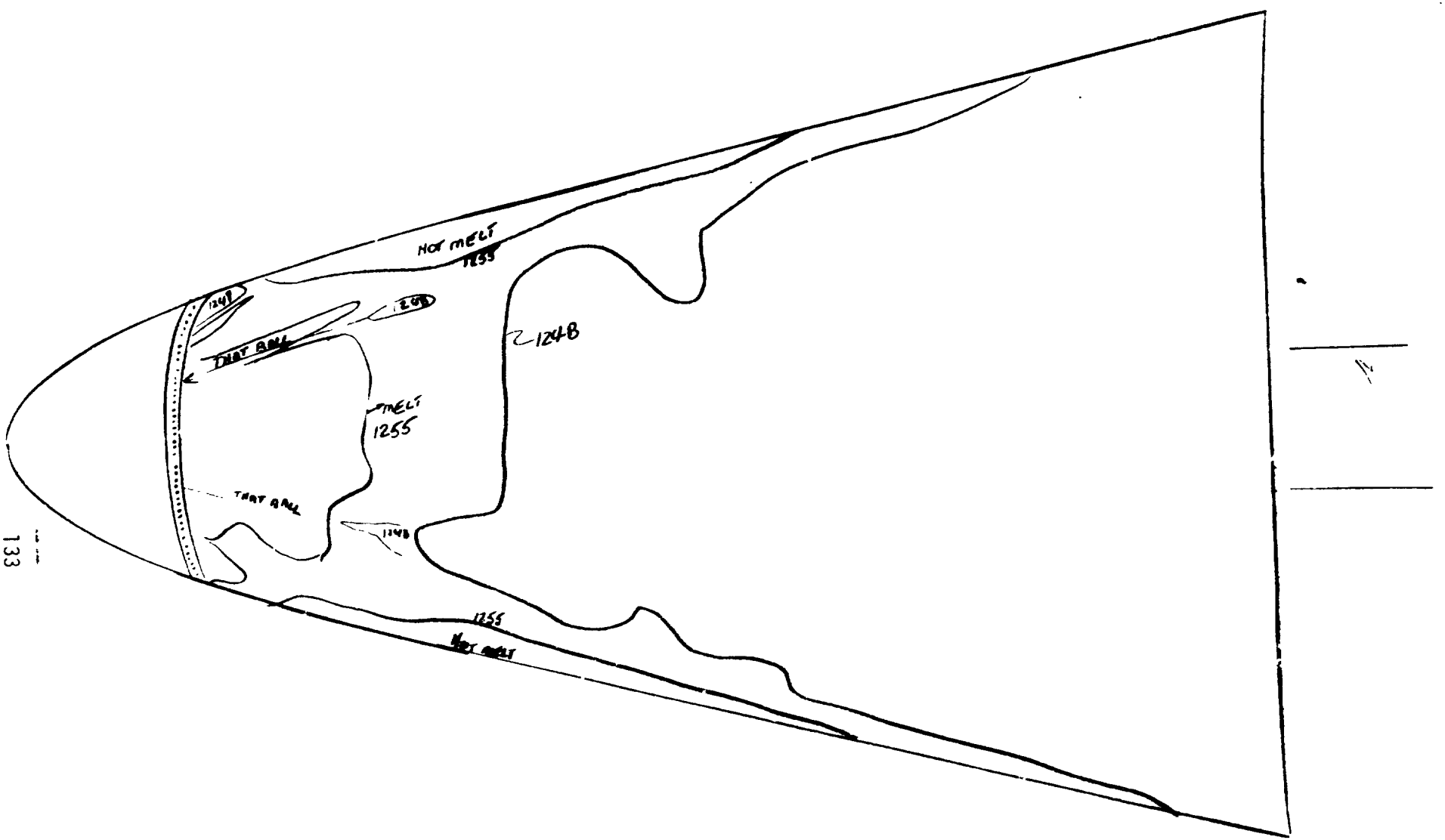
388
GRP 28

$\alpha = 40°$

1235 1st Fr ℄

290 PSIA
825 °F

$T_{12} = 300°F$



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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH FT CHSONIC TUNNEL B

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WRCUP CONFIG *** MODEL DESCRIPTION ***

GAP LOCATION/SIZE: A/L WIDTH DEPTH

TRIP LOCATION/SIZE: TYPE X/. DIA.

REN RED

28 11 TRIP > .110 .031 6.520E 05 3.561E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.96	290.9	1282	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .040 FT)	STREF (IN= .040 FT)
93.0	.031	1.345	3777	2.755E-05	7.548E-08	1.378E 06	1.494E-02	2.294E-02

LAPEGA (DEG F)	MOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RNCACAA)	TRAN(TO)	BETA(TO)
>ICE(S)	3RW					
>G	3B3	308	87	.9636	2.899E-01	3.3660E-01

PTC NO	TIME	(ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1 1232(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
> 2583(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65							
1 1233(300)	2.57	1.65	1.608E-02	.4807	2.170E-02	1.1461	1.969E-02	1.0395	1.984E-02
> 2584(300)	2.57	1.65	1.608E-02	.4807	2.170E-02	1.1461	1.969E-02	1.0395	1.984E-02
1 1234(300)	3.62	2.70	1.636E-02	.4881	1.696E-02	.8955	1.535E-02	.8122	1.550E-02
> 2585(300)	3.62	2.70	1.636E-02	.4881	1.696E-02	.8955	1.538E-02	.8122	1.550E-02
>G		3.87							
1 1235(300)	4.70	3.78	1.120E-02	.5818	1.436E-02	.7572	1.300E-02	.6866	1.311E-02
> 2586(300)	4.70	3.78	1.120E-02	.5818	1.436E-02	.7572	1.300E-02	.6868	1.311E-02
1 1236(300)	5.78	4.86	9.719E-03	.5133	1.265E-02	.6460	1.147E-02	.6058	1.156E-02
> 2587(300)	5.78	4.86	9.719E-03	.5133	1.265E-02	.6680	1.147E-02	.6058	1.156E-02
1 1237(300)	6.83	5.91	8.811E-03	.4653	1.147E-02	.6056	1.040E-02	.5493	1.048E-02
> 2588(300)	6.83	5.91	8.811E-03	.4653	1.147E-02	.6056	1.040E-02	.5493	1.048E-02
1 1238(300)	7.90	6.98	8.103E-03	.4279	1.055E-02	.5569	9.565E-03	.5051	9.641E-03
> 2589(300)	7.90	6.98	8.103E-03	.4279	1.055E-02	.5569	9.565E-03	.5051	9.641E-03
1 1239(300)	8.95	8.03	7.554E-03	.3990	9.831E-03	.5192	8.917E-03	.4709	8.988E-03
> 2590(300)	8.95	8.03	7.554E-03	.3990	9.831E-03	.5192	8.917E-03	.4709	8.988E-03
1 1240(300)	10.01	9.08	7.104E-03	.3752	9.245E-03	.4882	8.385E-03	.4428	8.452E-03
> 2591(300)	10.01	9.08	7.104E-03	.3752	9.245E-03	.4882	8.385E-03	.4428	8.452E-03
1 1241(300)	11.08	10.16	6.717E-03	.3547	.741E-03	.4616	7.928E-03	.4187	7.992E-03
> 2592(300)	11.08	10.16	6.717E-03	.3547	8.741E-03	.4616	7.928E-03	.4187	7.992E-03
1 1242(300)	12.16	11.23	6.387E-03	.3373	8.312E-03	.4390	7.534E-03	.3981	7.599E-03
> 2593(300)	12.16	11.23	6.387E-03	.3373	312E-03	.4390	7.534E-03	.3981	7.599E-03
1 1243(300)	13.21	12.29	6.108E-03	.3226	559E-03	.4198	7.204E-03	.3807	7.261E-03
> 2594(300)	13.21	12.29	6.108E-03	.3226	.449E-03	.4198	7.204E-03	.3807	7.267E-03

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V41H-624

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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WRCUR CONFIG *** MODEL DESCRIPTION ***

2R 11 1R1P

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	THIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
			5	.110	.031	6.520E 05	3.561E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.40	250.0	1202	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SINEF (RE .040 FT)
93.0	.031	1.349	3777	2.785E-05	7.548E-08	1.278E 06	1.894E-02	2.294E-02

CAMERA (DF(T))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RRCACER)	TRAN(TO)	HETA(TO)
>ICF(S)	308					
>6	303	300	87	.0636	2.899E-01	3.3660E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	1244(400)	14.29	13.34	5.657E-03	.3093	7.622E-03	.4025	6.913E-03	.3651	6.968E-03
S	2995(300)	14.29	13.34	5.857E-03	.3093	7.622E-03	.4025	6.913E-03	.3651	6.968E-03
I	1245(400)	15.34	14.41	5.634E-03	.2974	7.339E-03	.3876	6.656E-03	.3515	6.709E-03
S	2996(300)	15.34	14.41	5.634E-03	.2974	7.339E-03	.3876	6.656E-03	.3515	6.709E-03
I	1246(400)	16.41	15.49	5.440E-03	.2873	7.079E-03	.3739	6.421E-03	.3391	6.472E-03
S	2997(300)	16.41	15.49	5.440E-03	.2873	7.079E-03	.3739	6.421E-03	.3391	6.472E-03
I	1247(400)	17.49	16.57	5.260E-03	.2778	6.845E-03	.3615	6.204E-03	.3279	6.258E-03
S	2998(300)	17.49	16.57	5.260E-03	.2778	6.845E-03	.3615	6.204E-03	.3279	6.258E-03
I	1248(400)	18.54	17.62	5.100E-03	.2694	6.638E-03	.3505	6.020E-03	.3179	6.069E-03
S	2999(300)	18.54	17.62	5.100E-03	.2694	6.638E-03	.3505	6.020E-03	.3179	6.069E-03
I	1249(400)	19.62	18.69	4.951E-03	.2615	6.444E-03	.3403	5.845E-03	.3087	5.891E-03
S	3000(300)	19.62	18.69	4.951E-03	.2615	6.444E-03	.3403	5.845E-03	.3087	5.891E-03
I	1250(400)	20.67	19.74	4.818E-03	.2544	6.270E-03	.3311	5.687E-03	.3003	5.732E-03
S	3001(300)	20.67	19.74	4.818E-03	.2544	6.270E-03	.3311	5.687E-03	.3003	5.732E-03
I	1251(400)	21.74	20.82	4.692E-03	.2478	6.106E-03	.3224	5.538E-03	.2925	5.582E-03
S	3002(300)	21.74	20.82	4.692E-03	.2478	6.106E-03	.3224	5.538E-03	.2925	5.582E-03
I	1252(400)	22.80	21.87	4.578E-03	.2417	5.957E-03	.3146	5.403E-03	.2853	5.446E-03
S	3003(300)	22.80	21.87	4.578E-03	.2417	5.957E-03	.3146	5.403E-03	.2853	5.446E-03
I	1253(400)	23.87	22.95	4.469E-03	.2360	5.816E-03	.3071	5.275E-03	.2786	5.317E-03
S	3004(300)	23.87	22.95	4.469E-03	.2360	5.816E-03	.3071	5.275E-03	.2786	5.317E-03
I	1254(400)	24.92	24.00	4.370E-03	.2308	5.687E-03	.3003	5.158E-03	.2724	5.199E-03
S	3005(300)	24.92	24.00	4.370E-03	.2308	5.687E-03	.3003	5.158E-03	.2724	5.199E-03
I	1255(400)	25.97	25.05	4.277E-03	.2259	5.566E-03	.2940	5.049E-03	.2666	5.089E-03
S	3006(300)	25.97	25.05	4.277E-03	.2259	5.566E-03	.2940	5.049E-03	.2666	5.089E-03
I	1256(400)	27.05	26.13	4.188E-03	.2212	5.451E-03	.2878	4.944E-03	.2611	4.983E-03
S	3007(300)	27.05	26.13	4.188E-03	.2212	5.451E-03	.2878	4.944E-03	.2611	4.983E-03

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V41A-028 VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
28	11	TRIP				5	.110	.031	0.520E 05	3.561E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	250.9	1282	34.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	STREF (RE .040 FT)
93.8	.031	1.345	3777	2.765E-05	7.568E-08	1.378E 06	1.494E-02	2.294E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
10F(1)	384					
5ILE(5)	383	300	87	.0636	2.899E-01	3.3660E-01
5B						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	1257(300)	28.13	27.21	4.105E-03	.2168	5.342E-03	.2821	4.845E-03	.2559	4.884E-03
2	300R(300)	28.13	27.21	4.105E-03	.2169	5.342E-03	.2821	4.845E-03	.2559	4.884E-03
1	1258(300)	29.20	28.28	4.026E-03	.2126	5.239E-03	.2767	4.752E-03	.2509	4.790E-03
2	300S(300)	29.20	28.28	4.026E-03	.2126	5.239E-03	.2767	4.752E-03	.2509	4.790E-03
		29.83		MODEL WAS LEFT CENTERLINE						
1	1259(300)	30.25	29.33	3.953E-03	.2088	5.144E-03	.2717	4.668E-03	.2464	4.783E-03
2	301U(300)	30.25	29.33	3.953E-03	.2088	5.144E-03	.2717	4.668E-03	.2464	4.783E-03
1	1260(300)	31.33	30.41	3.882E-03	.2050	5.052E-03	.2668	4.583E-03	.2420	4.619E-03
2	301V(300)	31.33	30.41	3.882E-03	.2050	5.052E-03	.2668	4.583E-03	.2420	4.619E-03
1	1261(300)	32.38	31.44	3.817E-03	.2016	4.967E-03	.2623	4.505E-03	.2379	4.541E-03
2	301W(300)	32.38	31.44	3.817E-03	.2016	4.967E-03	.2623	4.505E-03	.2379	4.541E-03
1	1262(300)	33.46	32.53	3.753E-03	.1982	4.884E-03	.2580	4.430E-03	.2340	4.466E-03
2	301X(300)	33.46	32.53	3.753E-03	.1982	4.884E-03	.2580	4.430E-03	.2340	4.466E-03
1	1263(300)	34.51	33.58	3.694E-03	.1951	4.807E-03	.2539	4.360E-03	.2303	4.395E-03
2	301Y(300)	34.51	33.58	3.694E-03	.1951	4.807E-03	.2539	4.360E-03	.2303	4.395E-03

388

GRP 29

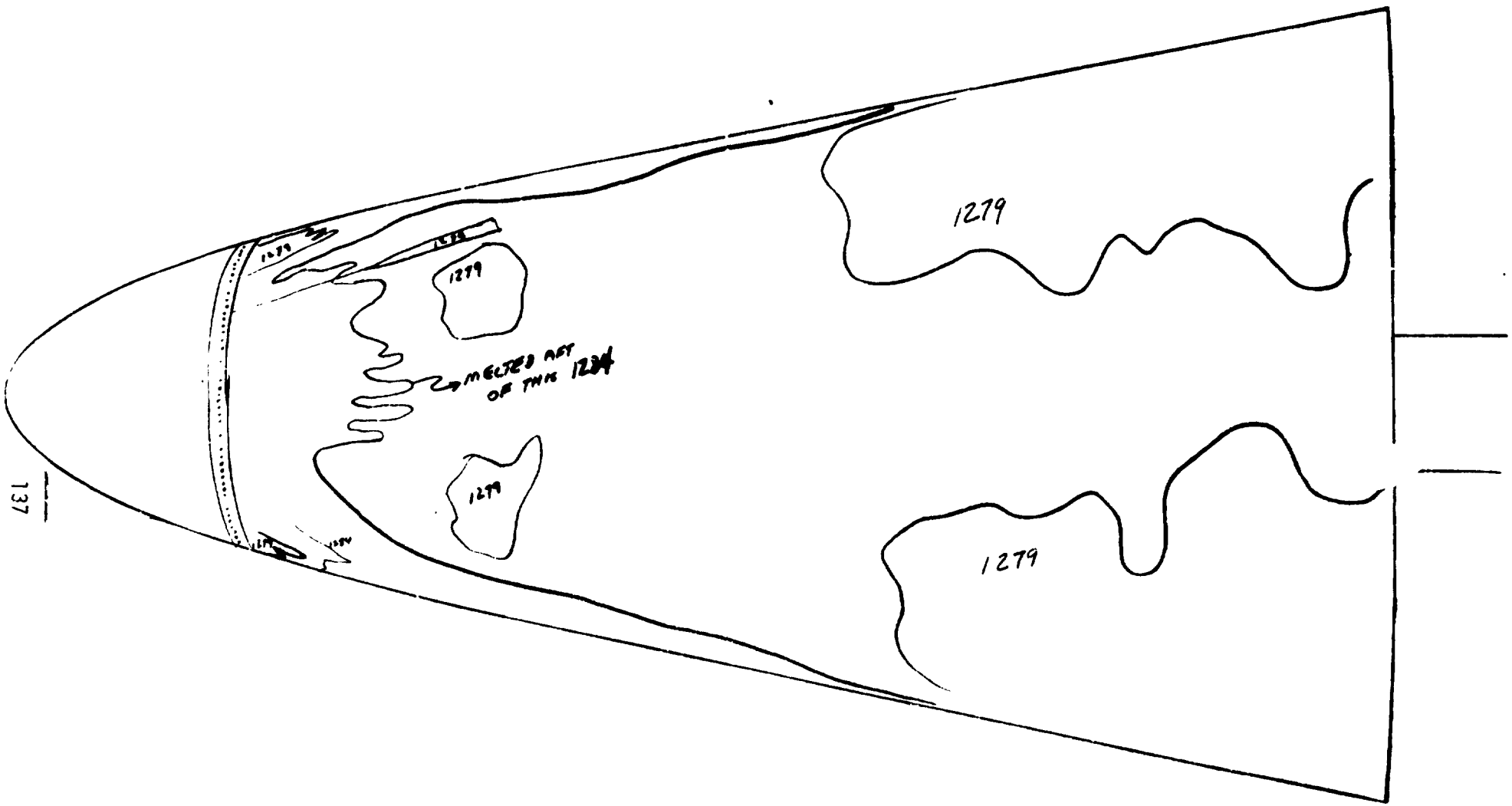
$\alpha = 30°$

h 9 1st FR ℄

425 PSIA

840 °F

$T_{PC} = 300°F$



*61H-A20

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
29	11	TRIP				5	.110	.031	9.301E 05	5.080E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-FREEND	ROLL-MODEL	YAW
7.98	424.3	1295	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
94.3	.046	1.945	3797	3.931E-05	7.590E-06	1.966E 06	2.278E-02	1.922E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXAX)	TRAN(TO)	BETA(TO)
10F(1)	388					
51LE(5)	383	300	86	.0636	2.857E-01	3.3019E-01

56

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
>	3017(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
I	1266(300)	1.52		MODEL HAS NOT REACHED CENTERLINE						
IN_FCT TIME =			1.65							
I	1267(300)	2.57	1.65	1.636E-02	.7181	2.120E-02	.9308	2.045E-02	.8977	1.356E-02
>	3018(300)	2.57	1.65	1.636E-02	.7181	2.120E-02	.9308	2.045E-02	.8977	1.356E-02
I	1268(300)	3.65	2.73	1.272E-02	.5585	1.649E-02	.7239	1.590E-02	.6982	1.055E-02
>	3019(300)	3.65	2.73	1.272E-02	.5585	1.649E-02	.7239	1.590E-02	.6982	1.055E-02
56			3.87							
I	1269(300)	4.72	3.85	1.077E-02	.4729	1.396E-02	.6129	1.347E-02	.5911	8.929E-03
>	3020(300)	4.72	3.85	1.077E-02	.4729	1.396E-02	.6129	1.347E-02	.5911	8.929E-03
I	1270(300)	5.78	4.85	9.534E-03	.4185	1.236E-02	.5425	1.192E-02	.5232	7.902E-03
>	3021(300)	5.78	4.85	9.534E-03	.4185	1.236E-02	.5425	1.192E-02	.5232	7.902E-03
I	1271(300)	6.85	5.93	8.625E-03	.3786	1.118E-02	.4908	1.078E-02	.4733	7.149E-03
>	3022(300)	6.85	5.93	8.625E-03	.3786	1.118E-02	.4908	1.078E-02	.4733	7.149E-03
I	1272(300)	7.90	6.98	7.949E-03	.3490	1.030E-02	.4523	9.937E-03	.4362	6.589E-03
>	3023(300)	7.90	6.98	7.949E-03	.3490	1.030E-02	.4523	9.937E-03	.4362	6.589E-03
I	1273(300)	8.98	8.06	7.349E-03	.3268	9.540E-03	.4210	9.249E-03	.4060	6.133E-03
>	3024(300)	8.98	8.06	7.359E-03	.3268	9.540E-03	.4210	9.249E-03	.4060	6.133E-03
I	1274(300)	10.03	9.11	6.959E-03	.3055	9.020E-03	.3960	8.694E-03	.3819	5.768E-03
>	3025(300)	10.03	9.11	6.959E-03	.3055	9.020E-03	.3960	8.694E-03	.3819	5.768E-03
I	1275(300)	11.11	10.19	6.541E-03	.2889	8.530E-03	.3745	8.227E-03	.3611	5.455E-03
>	3026(300)	11.11	10.19	6.541E-03	.2889	8.530E-03	.3745	8.227E-03	.3611	5.455E-03
I	1276(300)	12.16	11.23	6.265E-03	.2750	8.121E-03	.3565	7.832E-03	.3438	5.193E-03
>	3027(300)	12.16	11.23	6.265E-03	.2750	8.121E-03	.3565	7.832E-03	.3438	5.193E-03
I	1277(300)	13.21	12.29	5.991E-03	.2630	7.766E-03	.3409	7.490E-03	.3288	4.966E-03
>	3028(300)	13.21	12.29	5.991E-03	.2630	7.766E-03	.3409	7.490E-03	.3288	4.966E-03

*41H-42A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	RED
20	11	TRIP				S	.110	.031	9.301E 05	5.000E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.96	424.3	1295	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	STREF (RE .040 FT)
94.3	.056	1.965	1797	3.931E-05	7.590E-08	1.966E 06	2.278E-02	1.922E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAR)	TRAN(TO)	BETA(TO)
10P(1)	380					
SICE(S)	383	300	86	.0636	2.857E-01	3.3019E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1278(300)	14.29	13.34	5.745E-03	.2522	7.447E-03	.3269	7.182E-03	.3153	4.762E-03
S	3029(300)	14.29	13.34	5.745E-03	.2522	7.447E-03	.3269	7.182E-03	.3153	4.762E-03
I	1279(300)	15.36	14.44	5.527E-03	.2424	7.164E-03	.3145	6.904E-03	.3033	4.581E-03
S	3030(300)	15.36	14.44	5.527E-03	.2424	7.164E-03	.3145	6.904E-03	.3033	4.581E-03
I	1281(300)	16.41	15.49	5.336E-03	.2342	6.916E-03	.3036	6.670E-03	.2928	4.423E-03
S	3031(300)	16.41	15.49	5.336E-03	.2342	6.916E-03	.3036	6.670E-03	.2928	4.423E-03
I	1281(300)	17.49	16.57	5.160E-03	.2265	6.688E-03	.2936	6.450E-03	.2831	4.277E-03
S	3032(300)	17.49	16.57	5.160E-03	.2265	6.688E-03	.2936	6.450E-03	.2831	4.277E-03
I	1282(300)	18.57	17.66	5.000E-03	.2195	6.481E-03	.2845	6.250E-03	.2744	4.144E-03
S	3033(300)	18.57	17.66	5.000E-03	.2195	6.481E-03	.2845	6.250E-03	.2744	4.144E-03
I	1283(300)	19.62	18.69	4.857E-03	.2132	6.296E-03	.2764	6.072E-03	.2665	4.026E-03
S	3034(300)	19.62	18.69	4.857E-03	.2132	6.296E-03	.2764	6.072E-03	.2665	4.026E-03
S	3035(300)	20.67	19.74	4.720E-03	.2075	6.126E-03	.2689	5.908E-03	.2594	3.917E-03
I	1284(300)	20.69	19.77	4.723E-03	.2073	6.122E-03	.2687	5.904E-03	.2592	3.915E-03
I	1285(300)	21.74	20.82	4.602E-03	.2020	5.965E-03	.2619	5.753E-03	.2526	3.815E-03
S	3036(300)	21.74	20.82	4.602E-03	.2020	5.965E-03	.2619	5.753E-03	.2526	3.815E-03
I	1286(300)	22.82	21.90	4.458E-03	.1970	5.817E-03	.2554	5.610E-03	.2463	3.720E-03
S	3037(300)	22.82	21.90	4.458E-03	.1970	5.817E-03	.2554	5.610E-03	.2463	3.720E-03
I	1287(300)	23.90	22.97	4.381E-03	.1923	5.679E-03	.2493	5.477E-03	.2404	3.632E-03
S	3038(300)	23.90	22.97	4.381E-03	.1923	5.679E-03	.2493	5.477E-03	.2404	3.632E-03
I	1288(300)	24.95	24.03	4.245E-03	.1881	5.553E-03	.2438	5.356E-03	.2351	3.551E-03
S	3039(300)	24.95	24.03	4.245E-03	.1881	5.553E-03	.2438	5.356E-03	.2351	3.551E-03
I	1289(300)	26.02	25.10	4.192E-03	.1840	5.433E-03	.2385	5.240E-03	.2300	3.474E-03
S	3040(300)	26.02	25.10	4.192E-03	.1840	5.433E-03	.2385	5.240E-03	.2300	3.474E-03
		26.55		MODEL HAS LEFT CENTERLINE						

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V41R-828 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
20	11	TRIP				5	.110	.031	9.301E 05	5.080E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	424.3	1295	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .060 FT)	STREF (H= .060 FT)
94.3	.044	1.949	3797	3.931E-05	7.590E-08	1.566E 06	2.278E-02	1.922E-02

CAMERA (OF(T) SIDE(S) >0	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	THAW(TO)	RETA(TO)
	288					
	283	300	84	.0636	2.057E-01	3.3019E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1290(300)	27.08	28.15	4.107E-03	.1803	5.323E-03	.2337	5.133E-03	.2254	3.484E-03
2	3041(300)	27.08	28.15	4.107E-03	.1803	5.323E-03	.2337	5.133E-03	.2254	3.484E-03
1	1291(300)	28.15	27.23	4.025E-03	.1767	5.216E-03	.2290	5.031E-03	.2209	3.336E-03
2	3042(300)	28.15	27.23	4.025E-03	.1767	5.216E-03	.2290	5.031E-03	.2209	3.336E-03
1	1292(300)	29.20	28.28	3.949E-03	.1734	5.119E-03	.2247	4.937E-03	.2167	3.273E-03
2	3043(300)	29.20	28.28	3.949E-03	.1734	5.119E-03	.2247	4.937E-03	.2167	3.273E-03
1	1293(300)	30.28	29.35	3.876E-03	.1702	5.024E-03	.2205	4.845E-03	.2127	3.213E-03
2	3044(300)	30.28	29.35	3.876E-03	.1702	5.024E-03	.2205	4.845E-03	.2127	3.213E-03

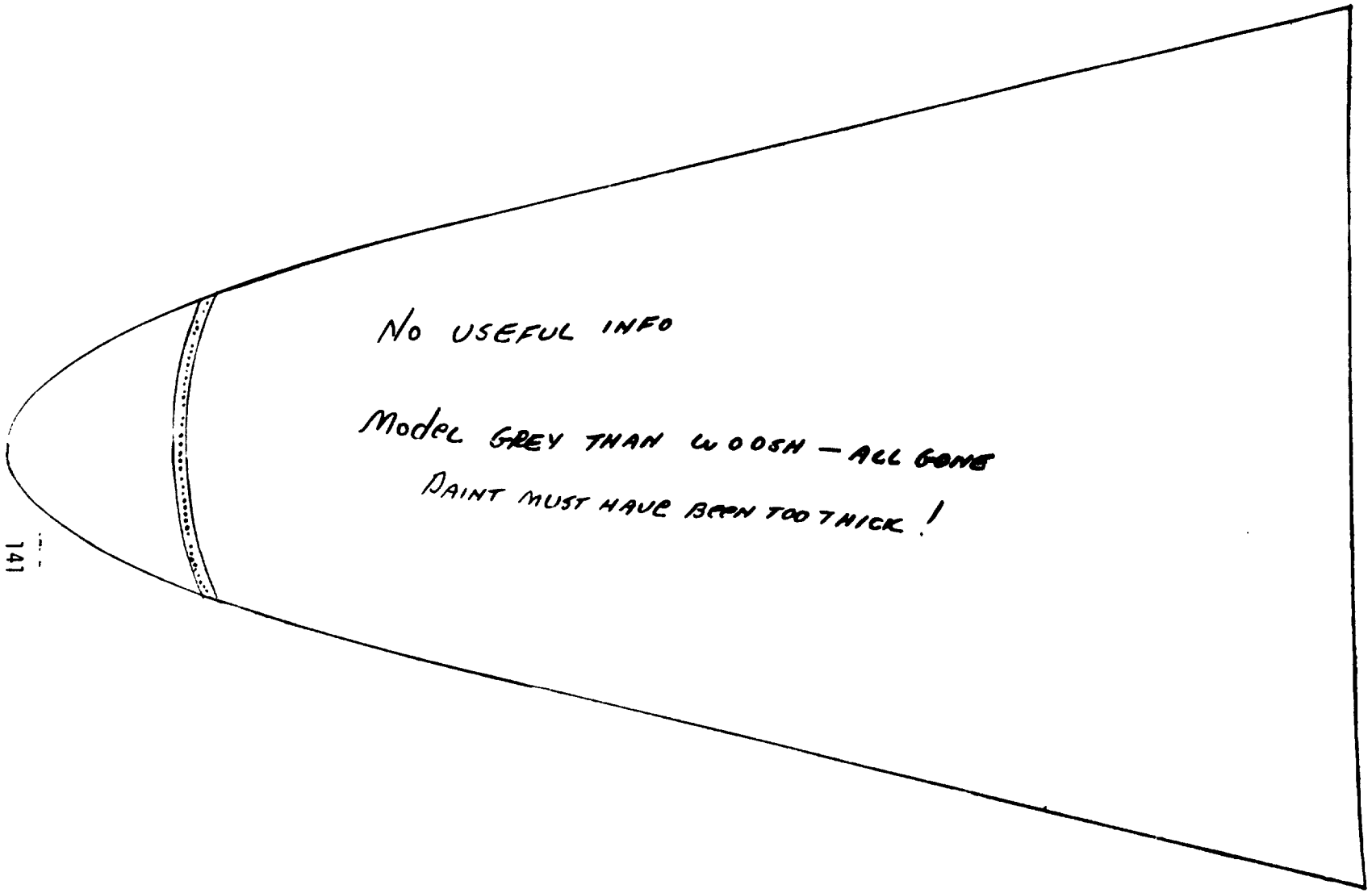
28
GRP 30

$\alpha = 40°$

1299 1st Fr on ℄

425 PSIA
840 °F

$T_{FC} = 350°F$



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V41R-024 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REN	RED
38	11	TRIP				S	.110	.031	9.254E 05	5.054E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	425.8	1302	39.00	-9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SINEF (H= .040 FT)
94.8	.044	1.970	3808	3.923E-05	7.636E-08	1.557E 06	2.284E-02	1.425E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HHOACAR)	TRAN(TO)	BETA(TO)
IOP(1)	288					
>ICE(5)	283	350	88	.0052	3.473E-01	4.312E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	1296(350)	1.50		MODEL WAS NOT REACHED CENTERLINE						
>	3047(350)	1.50		MODEL WAS NOT REACHED CENTERLINE						
INJECT TIME =			1.65							
I	1297(350)	2.57	1.65	2.140E-02	.9588	2.909E-02	1.2733	2.616E-02	1.1451	1.009E-02
>	3048(350)	2.57	1.65	2.140E-02	.9588	2.909E-02	1.2733	2.616E-02	1.1451	1.009E-02
>	3049(350)	3.62	2.72	1.711E-02	.7492	2.273E-02	.9950	2.044E-02	.8948	1.413E-02
I	1298(350)	3.65	2.72	1.704E-02	.7458	2.262E-02	.9904	2.034E-02	.8906	1.407E-02
>6			3.90							
I	1299(350)	4.70	3.78	1.447E-02	.6335	1.922E-02	.8413	1.728E-02	.7565	1.195E-02
>	3050(350)	4.70	3.78	1.447E-02	.6335	1.922E-02	.8413	1.728E-02	.7565	1.195E-02
I	1300(350)	5.78	4.85	1.276E-02	.5588	1.695E-02	.7421	1.524E-02	.6674	1.054E-02
>	3051(350)	5.78	4.85	1.276E-02	.5588	1.695E-02	.7421	1.524E-02	.6674	1.054E-02
I	1301(350)	6.83	5.90	1.157E-02	.5066	1.537E-02	.6728	1.382E-02	.6050	9.556E-03
>	3052(350)	6.83	5.90	1.157E-02	.5066	1.537E-02	.6728	1.382E-02	.6050	9.556E-03
I	1302(350)	7.90	6.98	1.064E-02	.4659	1.413E-02	.6188	1.271E-02	.5564	8.788E-03
>	3053(350)	7.90	6.98	1.064E-02	.4659	1.413E-02	.6188	1.271E-02	.5564	8.788E-03
I	1303(350)	8.95	8.03	9.922E-03	.4344	1.318E-02	.5768	1.185E-02	.5187	8.193E-03
>	3054(350)	8.95	8.03	9.922E-03	.4344	1.318E-02	.5768	1.185E-02	.5187	8.193E-03
I	1304(350)	10.03	9.11	9.317E-03	.4079	1.237E-02	.5417	1.113E-02	.4871	7.694E-03
>	3055(350)	10.03	9.11	9.317E-03	.4079	1.237E-02	.5417	1.113E-02	.4871	7.694E-03
I	1305(350)	11.11	10.18	8.811E-03	.3857	1.170E-02	.5123	1.052E-02	.4607	7.276E-03
>	3056(350)	11.13	10.21	8.800E-03	.3853	1.169E-02	.5116	1.051E-02	.4601	7.267E-03
I	1306(350)	12.16	11.23	8.369E-03	.3672	1.114E-02	.4877	1.002E-02	.4386	6.927E-03
>	3057(350)	12.16	11.23	8.369E-03	.3672	1.114E-02	.4877	1.002E-02	.4386	6.927E-03
I	1307(350)	13.23	12.31	8.014E-03	.3508	1.066E-02	.4669	9.570E-03	.4190	6.617E-03
>	3058(350)	13.23	12.31	8.014E-03	.3508	1.066E-02	.4669	9.570E-03	.4190	6.617E-03

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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GRC JP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
30	11	TRIP				5	.110	.031	9.254E 05	5.054E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	425.8	1302	39.99	-9.99	30.00	0	0

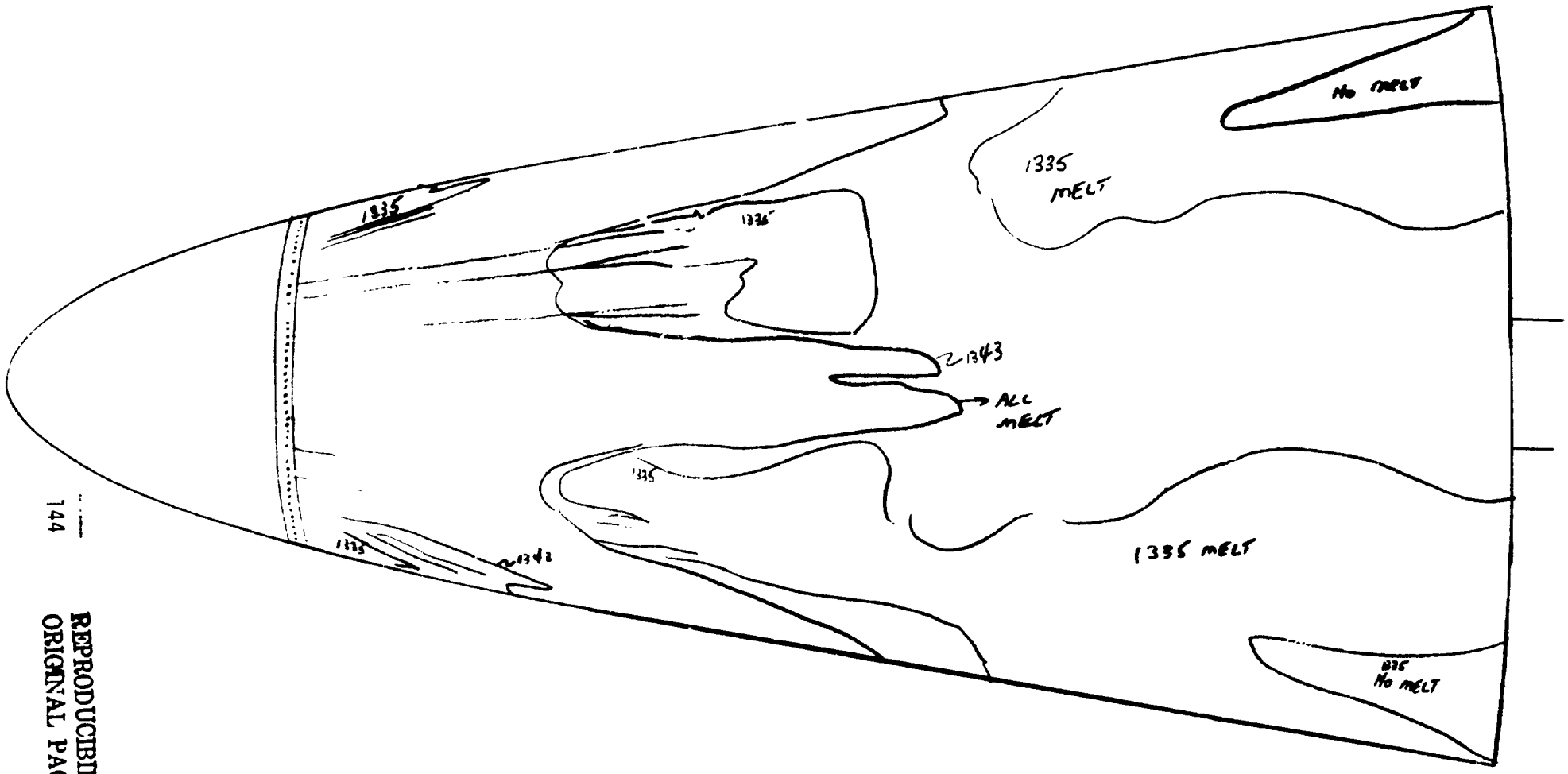
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
94.8	.044	1.976	3800	3.923E-05	7.634E-08	1.957E 06	2.284E-02	1.925E-02

CAMERA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAK)	TBAR(TO)	BETA(TO)
IOR(1)	288					
SICE(S)	283	350	88	.0652	3.473E-01	4.3124E-01
S6						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	1308(350)	14.31	13.39	7.685E-03	.3364	1.021E-02	.4468	9.176E-03	.4018	6.346E-03
S	3059(350)	14.31	13.39	7.685E-03	.3364	1.021E-02	.4468	9.176E-03	.4018	6.346E-03
I	1309(350)	15.39	14.46	7.343E-03	.3237	9.818E-03	.4298	8.830E-03	.3865	6.185E-03
S	3060(350)	15.39	14.46	7.343E-03	.3237	9.818E-03	.4298	8.830E-03	.3865	6.185E-03
I	1310(350)	16.44	15.51	7.138E-03	.3125	9.480E-03	.4150	8.525E-03	.3732	5.895E-03
S	3061(350)	16.44	15.51	7.138E-03	.3125	9.480E-03	.4150	8.525E-03	.3732	5.895E-03
I	1311(350)	17.51	16.59	6.903E-03	.3022	9.167E-03	.4013	8.244E-03	.3609	5.700E-03
S	3062(350)	17.51	16.59	6.903E-03	.3022	9.167E-03	.4013	8.244E-03	.3609	5.700E-03
I	1312(350)	18.57	17.64	6.644E-03	.2931	8.840E-03	.3872	7.995E-03	.3500	5.528E-03
S	3063(350)	18.57	17.64	6.644E-03	.2931	8.840E-03	.3872	7.995E-03	.3500	5.528E-03
I	1313(350)	19.64	18.72	6.499E-03	.2865	8.631E-03	.3778	7.761E-03	.3398	5.366E-03
S	3064(350)	19.64	18.72	6.499E-03	.2865	8.631E-03	.3778	7.761E-03	.3398	5.366E-03
I	1314(350)	20.72	19.79	6.320E-03	.2787	8.393E-03	.3674	7.547E-03	.3304	5.219E-03
S	3065(350)	20.72	19.79	6.320E-03	.2787	8.393E-03	.3674	7.547E-03	.3304	5.219E-03
		20.84		MODEL HAS LEFT CENTERLINE						
I	1315(350)	21.77	20.85	6.158E-03	.2696	8.178E-03	.3580	7.355E-03	.3220	5.085E-03
S	3066(350)	21.79	20.87	6.155E-03	.2694	8.173E-03	.3578	7.350E-03	.3218	5.082E-03
I	1316(350)	22.85	21.92	6.005E-03	.2629	7.975E-03	.3491	7.172E-03	.3140	4.959E-03
S	3067(350)	22.85	21.92	6.005E-03	.2629	7.975E-03	.3491	7.172E-03	.3140	4.959E-03
I	1317(350)	23.90	22.97	5.866E-03	.2568	7.790E-03	.3411	7.006E-03	.3067	4.844E-03
S	3068(350)	23.90	22.97	5.866E-03	.2568	7.790E-03	.3411	7.006E-03	.3067	4.844E-03

388 FRP 31 $\alpha = 20°$ 1st FR ℄

425 PSIA
840°F $T_{PC} = 250°F$



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V41R-02A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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WRCUR CINFIF *** MODEL DESCRIPTION ***

31 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	REW
			5	.110	.091	9.281E 05	5.069E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SETCH	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	423.2	1295	20.02	9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.2	.044	1.964	3796	3.972E-05	7.58HE-08	1.562E 06	2.275E-02	1.926E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAON)	TRAN(TO)	BETA(TO)
10F(1)	28A					
5IEF(5)	303	259	86	.0617	2.191E-01	2.3589E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	1320(250)	1.52		MODEL HAS NOT REACHED CENTERLINE						
S	3070(250)	1.52		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.65							
I	1321(250)	2.57	1.65	1.134E-02	.4984	1.438E-02	.6322	1.469E-02	.6456	9.446E-03
S	3072(250)	2.57	1.65	1.134E-02	.4984	1.438E-02	.6322	1.469E-02	.6456	9.446E-03
I	1322(250)	3.65	2.73	8.818E-03	.3876	1.119E-02	.4917	1.142E-02	.5021	7.347E-03
S	3073(250)	3.65	2.73	8.818E-03	.3876	1.119E-02	.4917	1.142E-02	.5021	7.347E-03
56			3.87							
I	1323(250)	4.72	3.8A	7.466E-03	.3282	9.471E-03	.4163	9.672E-03	.4251	6.220E-03
S	3074(250)	4.72	3.8A	7.466E-03	.3282	9.471E-03	.4163	9.672E-03	.4251	6.220E-03
I	1324(250)	5.78	4.85	6.6UHE-03	.2905	8.382E-03	.3685	8.560E-03	.3763	5.505E-03
S	3075(250)	5.78	4.85	6.6UHE-03	.2905	8.382E-03	.3685	8.560E-03	.3763	5.505E-03
I	1325(250)	6.85	5.93	5.978E-03	.2628	7.583E-03	.3333	7.744E-03	.3404	4.980E-03
S	3076(250)	6.85	5.93	5.978E-03	.2628	7.583E-03	.3333	7.744E-03	.3404	4.980E-03
I	1326(250)	7.90	6.98	5.509E-03	.2422	6.989E-03	.3072	7.137E-03	.3137	4.590E-03
S	3077(250)	7.90	6.98	5.509E-03	.2422	6.989E-03	.3072	7.137E-03	.3137	4.590E-03
I	3078(250)	8.98	8.06	5.128E-03	.2256	6.505E-03	.2860	6.643E-03	.2920	4.272E-03
I	1327(250)	9.00	8.08	5.128E-03	.2256	6.505E-03	.2860	6.643E-03	.2920	4.272E-03
I	1328(250)	10.06	9.13	4.818E-03	.2117	6.110E-03	.2686	6.239E-03	.2743	4.013E-03
S	3079(250)	10.06	9.13	4.818E-03	.2117	6.110E-03	.2686	6.239E-03	.2743	4.013E-03
I	1329(250)	11.13	10.21	4.555E-03	.2002	5.779E-03	.2540	5.901E-03	.2594	3.795E-03
S	3080(250)	11.13	10.21	4.555E-03	.2002	5.779E-03	.2540	5.901E-03	.2594	3.795E-03
I	1330(250)	12.18	11.26	4.338E-03	.1907	5.502E-03	.2419	5.614E-03	.2470	3.614E-03
S	3081(250)	12.18	11.26	4.338E-03	.1907	5.502E-03	.2419	5.614E-03	.2470	3.614E-03
I	1331(250)	13.26	12.34	4.144E-03	.1822	5.257E-03	.2311	5.368E-03	.2360	3.453E-03
S	3082(250)	13.26	12.34	4.144E-03	.1822	5.257E-03	.2311	5.368E-03	.2360	3.453E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	RED
31	11	TRIP				S	.110	.031	9.281E 05	5.069E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	423.2	1295	20.02	9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
94.2	.044	1.964	3796	3.922E-05	7.588E-08	1.562E 06	2.273E-02	1.925E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAA)	TRAN(TO)	BETA(TO)
SICE(S)	388					
36	383	250	86	.0017	2.191E-01	2.3589E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	1332(250)	14.34	13.41	3.974E-03	.1747	5.041E-03	.2216	5.148E-03	.2263	3.311E-03
S	3083(250)	14.34	13.41	3.974E-03	.1747	5.041E-03	.2216	5.148E-03	.2263	3.311E-03
I	1333(250)	15.39	14.46	3.827E-03	.1682	4.855E-03	.2134	4.958E-03	.2179	3.188E-03
S	3084(250)	15.39	14.46	3.827E-03	.1682	4.855E-03	.2134	4.958E-03	.2179	3.188E-03
I	1334(250)	16.44	15.51	3.695E-03	.1624	4.687E-03	.2061	4.787E-03	.2104	3.079E-03
S	3085(250)	16.44	15.51	3.695E-03	.1624	4.687E-03	.2061	4.787E-03	.2104	3.079E-03
I	1335(250)	17.51	16.59	3.573E-03	.1571	4.533E-03	.1993	4.629E-03	.2035	2.977E-03
S	3086(250)	17.51	16.59	3.573E-03	.1571	4.533E-03	.1993	4.629E-03	.2035	2.977E-03
I	1336(250)	18.59	17.67	3.463E-03	.1522	4.393E-03	.1931	4.486E-03	.1972	2.885E-03
S	3087(250)	18.59	17.67	3.463E-03	.1522	4.393E-03	.1931	4.486E-03	.1972	2.885E-03
I	1337(250)	19.64	18.72	3.304E-03	.1479	4.267E-03	.1876	4.358E-03	.1916	2.803E-03
S	3088(250)	19.64	18.72	3.304E-03	.1479	4.267E-03	.1876	4.358E-03	.1916	2.803E-03
I	1338(250)	20.72	19.79	3.271E-03	.1438	4.150E-03	.1824	4.238E-03	.1863	2.726E-03
S	3089(250)	20.72	19.79	3.271E-03	.1438	4.150E-03	.1824	4.238E-03	.1863	2.726E-03
I	1339(250)	21.79	20.87	3.186E-03	.1400	4.041E-03	.1777	.127E-03	.1814	2.654E-03
S	3090(250)	21.79	20.87	3.186E-03	.1400	4.041E-03	.1777	4.127E-03	.1814	2.654E-03
I	1340(250)	22.87	21.95	3.107E-03	.1366	3.941E-03	.1732	4.025E-03	.1769	2.588E-03
S	3091(250)	22.87	21.95	3.107E-03	.1366	3.941E-03	.1732	4.025E-03	.1769	2.588E-03
I	1341(250)	23.92	23.00	3.035E-03	.1334	3.850E-03	.1692	3.932E-03	.1728	2.529E-03
S	3092(250)	23.92	23.00	3.035E-03	.1334	3.850E-03	.1692	3.932E-03	.1728	2.529E-03
I	1342(250)	25.00	24.07	2.966E-03	.1304	3.763E-03	.1654	3.843E-03	.1689	2.471E-03
S	3093(250)	25.00	24.07	2.966E-03	.1304	3.763E-03	.1654	3.843E-03	.1689	2.471E-03
I	1343(250)	26.07	25.15	2.902E-03	.1276	3.682E-03	.1618	3.760E-03	.1653	2.418E-03
S	3094(250)	26.07	25.15	2.902E-03	.1276	3.682E-03	.1618	3.760E-03	.1653	2.418E-03
I	1344(250)	27.13	26.21	2.843E-03	.1250	3.607E-03	.1586	3.683E-03	.1619	2.369E-03
S	3095(250)	27.13	26.21	2.843E-03	.1250	3.607E-03	.1586	3.683E-03	.1619	2.369E-03

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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REB	RED
31	11	TRIP				S	.110	.031	9.281E 05	5.069E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	423.2	1245	20.02	9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
94.2	.044	1.944	3796	3.922E-05	7.588E-08	1.962E 06	2.275E-02	1.926E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAPAR)	TRAR(TO)	BETA(TO)
IGS(T)	280					
>ICE(S)	283	250	86	.0617	2.191E-01	2.3589E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	1345(250)	28.18	27.25	2.728E-03	.1226	3.537E-03	.1555	3.612E-03	.1588	2.323E-03
>	3096(250)	28.18	27.25	2.728E-03	.1226	3.537E-03	.1555	3.612E-03	.1588	2.323E-03
I	1346(250)	29.25	28.33	2.735E-03	.1202	3.469E-03	.1525	3.542E-03	.1557	2.278E-03
>	3097(250)	29.25	28.33	2.735E-03	.1202	3.469E-03	.1525	3.542E-03	.1557	2.278E-03
I	1347(250)	30.33	29.40	2.648E-03	.1180	3.405E-03	.1497	3.477E-03	.1528	2.236E-03
>	3098(250)	30.33	29.40	2.648E-03	.1180	3.405E-03	.1497	3.477E-03	.1528	2.236E-03
I	1348(250)	31.38	30.44	2.637E-03	.1159	3.345E-03	.1471	3.416E-03	.1502	2.197E-03
>	3099(250)	31.38	30.44	2.637E-03	.1159	3.345E-03	.1471	3.416E-03	.1502	2.197E-03
I	1349(250)	32.46	31.53	2.542E-03	.1139	3.288E-03	.1445	3.358E-03	.1476	2.159E-03
>	3100(250)	32.46	31.53	2.542E-03	.1139	3.288E-03	.1445	3.358E-03	.1476	2.159E-03
>	3101(250)	33.51	32.58	2.520E-03	.1121	3.234E-03	.1422	3.303E-03	.1452	2.124E-03
I	1350(250)	33.53	32.61	2.549E-03	.1120	3.233E-03	.1421	3.302E-03	.1451	2.123E-03
		34.08		MODEL WAS LEFT CENTERLINE						
I	1351(250)	34.58	33.64	2.509E-03	.1103	3.182E-03	.1399	3.250E-03	.1429	2.090E-03
>	3102(250)	34.58	33.64	2.509E-03	.1103	3.182E-03	.1399	3.250E-03	.1429	2.090E-03
I	1352(250)	35.66	34.74	2.469E-03	.1086	3.133E-03	.1377	3.199E-03	.1406	2.057E-03
>	3103(250)	35.66	34.74	2.469E-03	.1086	3.133E-03	.1377	3.199E-03	.1406	2.057E-03
I	1353(250)	36.71	35.79	2.433E-03	.1069	3.086E-03	.1357	3.152E-03	.1385	2.027E-03
>	3104(250)	36.71	35.79	2.433E-03	.1069	3.086E-03	.1357	3.152E-03	.1385	2.027E-03
I	1354(250)	37.79	36.86	2.397E-03	.1054	3.041E-03	.1337	3.105E-03	.1365	1.997E-03
>	3105(250)	37.79	36.86	2.397E-03	.1054	3.041E-03	.1337	3.105E-03	.1365	1.997E-03
I	1355(250)	38.84	37.91	2.364E-03	.1039	2.998E-03	.1318	3.062E-03	.1346	1.969E-03
>	3106(250)	38.84	37.91	2.364E-03	.1039	2.998E-03	.1318	3.062E-03	.1346	1.969E-03
I	1356(250)	39.92	38.99	2.331E-03	.1025	2.957E-03	.1300	3.020E-03	.1327	1.942E-03
>	3107(250)	39.92	38.99	2.331E-03	.1025	2.957E-03	.1300	3.020E-03	.1327	1.942E-03

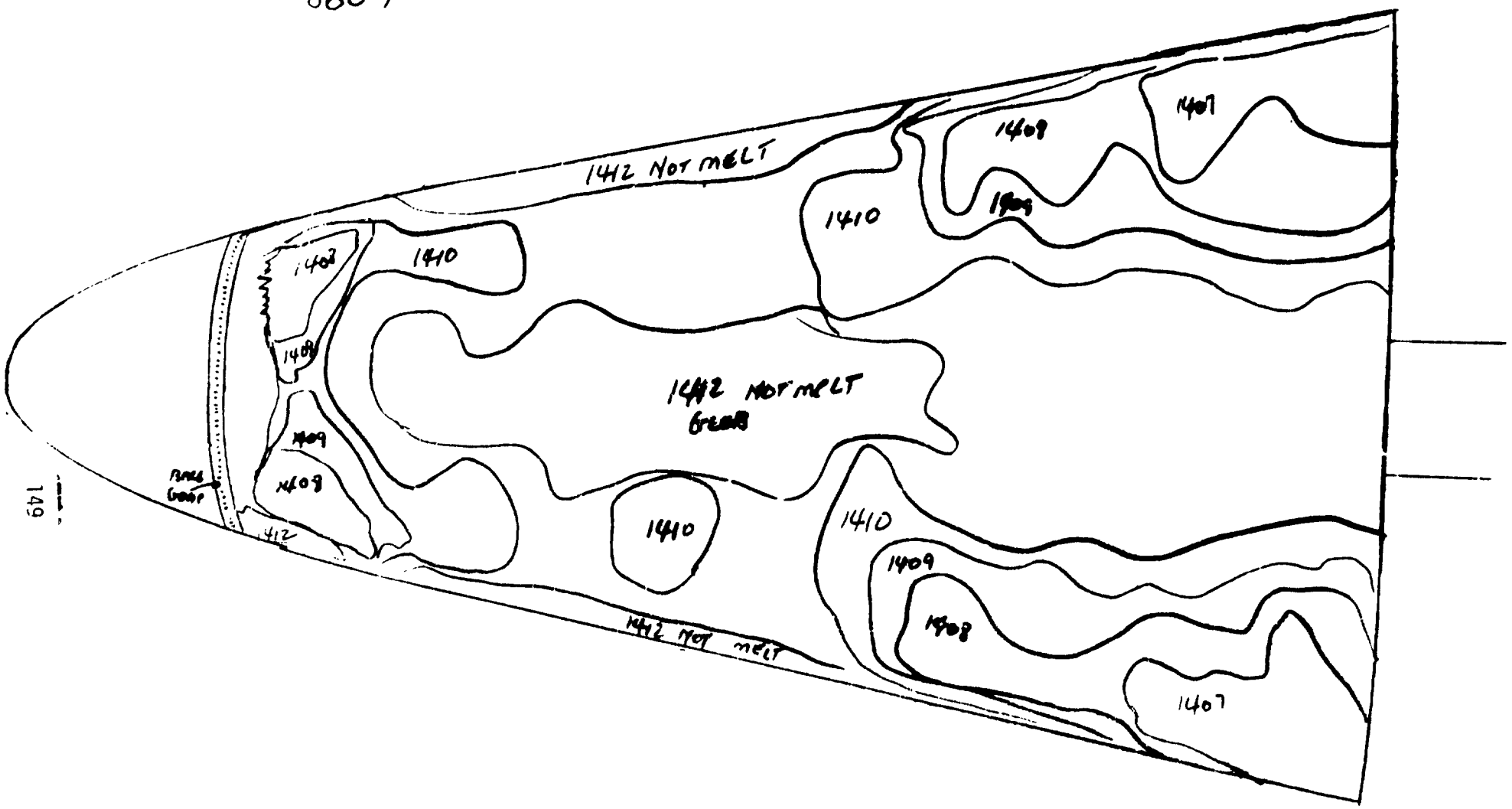
WNCUP	CONFIG	*** MODEL DESCRIPTION ***	SAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
31	11	TRIP				5	.110	.031	9.281E 05	5.069E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHENC	ROLL-MODEL	YAW
7.98	423.2	1295	20.02	9.98	30.00	9	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	STREF (HR .040 FT)
94.2	.044	1.964	3790	3.922E-05	7.5RRE-08	1.962E 06	2.275E-02	1.924E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
(OF(T)	288					
SICE(S)	283	250	86	.0617	2.191E-01	2.3589E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	1357(250)	40.57	40.04	2.300E-03	.1011	2.918E-03	.1283	2.980E-03	.1310	1.916E-03
5	3108(250)	40.57	40.04	2.300E-03	.1011	2.918E-03	.1283	2.980E-03	.1310	1.916E-03
1	1358(250)	42.04	41.12	2.270E-03	.0998	2.879E-03	.1266	2.940E-03	.1293	1.891E-03
5	3109(250)	42.04	41.12	2.270E-03	.0998	2.879E-03	.1266	2.940E-03	.1293	1.891E-03
1	1359(250)	43.12	42.19	2.241E-03	.0985	2.842E-03	.1249	2.903E-03	.1276	1.867E-03
5	3110(250)	43.12	42.19	2.241E-03	.0985	2.842E-03	.1249	2.903E-03	.1276	1.867E-03
1	1360(250)	44.17	43.25	2.213E-03	.0973	2.807E-03	.1234	2.867E-03	.1260	1.844E-03
5	3111(250)	44.20	43.27	2.213E-03	.0973	2.807E-03	.1234	2.866E-03	.1260	1.843E-03
1	1361(250)	45.22	44.30	2.187E-03	.0961	2.774E-03	.1219	2.833E-03	.1245	1.822E-03
5	3112(250)	45.22	44.30	2.187E-03	.0961	2.774E-03	.1219	2.833E-03	.1245	1.822E-03
1	1362(250)	46.30	45.37	2.161E-03	.0950	2.741E-03	.1205	2.794E-03	.1230	1.800E-03
5	3113(250)	46.30	45.37	2.161E-03	.0950	2.741E-03	.1205	2.794E-03	.1230	1.800E-03


1392 1st Fab
α = 30°
387
Gp 32
T_{PC} = 350°F
555 PSIA
860°F
1412 NOT MELT
1410
1409
1407
1408
1412 NOT MELT
GROOP
1412 NOT MELT

NASA-RI OH 94

V41H-02A

AEDC(ARO.INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	NED
32	11	TA1A				S	.110	.031	3.179E 06	4.438E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	552.5	1316	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .048 FT)	STREF (IN .048 FT)
95.5	.057	2.550	3027	5.010E-05	7.693E-08	2.492E 04	2.599E-02	1.786E-02

CAMERA (OPTIC)	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TALH(TO)	BETA(TO)
SICE(S)	3C04					
SG	3C07	358	89	.0052	3.439E-01	4.2529E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1395(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
S	3146(450)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.62							
I	1396(350)	2.55	1.64	2.167E-02	.8338	2.864E-02	1.1017	2.753E-02	1.0592	1.393E-02
S	3147(350)	2.55	1.64	2.167E-02	.8338	2.864E-02	1.1017	2.753E-02	1.0592	1.393E-02
I	1397(350)	3.57	2.66	1.659E-02	.6537	2.245E-02	.8838	2.158E-02	.8504	1.092E-02
S	3148(450)	3.57	2.66	1.659E-02	.6537	2.245E-02	.8838	2.158E-02	.8504	1.092E-02
SG			3.85							
I	1398(350)	4.65	3.74	1.435E-02	.5517	1.895E-02	.7290	1.822E-02	.7008	9.218E-03
S	3149(450)	4.65	3.74	1.434E-02	.5517	1.895E-02	.7290	1.822E-02	.7008	9.218E-03
I	1399(350)	5.73	4.82	1.264E-02	.4862	1.670E-02	.6424	1.605E-02	.6176	8.123E-03
S	3150(350)	5.73	4.82	1.264E-02	.4862	1.670E-02	.6424	1.605E-02	.6176	8.123E-03
I	1400(350)	6.78	5.87	1.145E-02	.4405	1.513E-02	.5820	1.454E-02	.5595	7.359E-03
S	3151(450)	6.78	5.87	1.145E-02	.4405	1.513E-02	.5820	1.454E-02	.5595	7.359E-03
I	1401(350)	7.83	6.92	1.056E-02	.4056	1.393E-02	.5359	1.339E-02	.5152	6.777E-03
S	3152(450)	7.83	6.92	1.056E-02	.4056	1.393E-02	.5359	1.339E-02	.5152	6.777E-03
I	1402(350)	8.90	7.99	9.807E-03	.3773	1.296E-02	.4986	1.246E-02	.4793	6.304E-03
S	3153(350)	8.90	7.99	9.807E-03	.3773	1.296E-02	.4986	1.246E-02	.4793	6.304E-03
S	3154(450)	9.96	9.05	9.220E-03	.3547	1.218E-02	.4687	1.171E-02	.4506	5.927E-03
I	1403(350)	9.98	9.07	9.207E-03	.3542	1.217E-02	.4680	1.170E-02	.4500	5.918E-03
I	1404(350)	11.03	10.12	8.716E-03	.3353	1.152E-02	.4431	1.107E-02	.4260	5.603E-03
S	3155(350)	11.03	10.12	8.716E-03	.3353	1.152E-02	.4431	1.107E-02	.4260	5.603E-03
I	1405(350)	12.08	11.17	8.246E-03	.3142	1.096E-02	.4217	1.054E-02	.4054	5.333E-03
S	3156(450)	12.08	11.17	8.246E-03	.3142	1.096E-02	.4217	1.054E-02	.4054	5.333E-03
I	1406(350)	13.16	12.24	7.923E-03	.3048	1.047E-02	.4028	1.006E-02	.3872	5.093E-03
S	3157(350)	13.16	12.24	7.923E-03	.3048	1.047E-02	.4028	1.006E-02	.3872	5.093E-03

NASA-RI OM 56

V41R-R2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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WRCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REB	RED
32	11	TRIP				5	.110	.031	1.179E 06	6.430E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	552.5	1316	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RN= .040 FT)	STREF (RN= .040 FT)
95.5	.057	2.550	3027	5.010E-05	7.693E-08	2.492E 06	2.599E-02	1.706E-02

LAPFGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACA)	THAW(TO)	RETA(TO)
10F(T)	3(P4					
>IDE(S)	3(P7	350	85	.0652	3.439E-01	4.2529E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1407(350)	14.21	13.32	7.603E-03	.2925	1.005E-02	.3865	9.658E-03	.3716	4.888E-03
>	315-(350)	14.21	13.35	7.603E-03	.2925	1.005E-02	.3865	9.658E-03	.3716	4.888E-03
I	1408(350)	15.26	14.35	7.320E-03	.2816	9.671E-03	.3721	9.298E-03	.3577	4.705E-03
>	3154(350)	15.26	14.35	7.320E-03	.2816	9.671E-03	.3721	9.298E-03	.3577	4.705E-03
I	1409(350)	16.31	15.40	7.065E-03	.2718	9.335E-03	.3592	8.975E-03	.3453	4.542E-03
>	3155(350)	16.31	15.40	7.065E-03	.2718	9.335E-03	.3592	8.975E-03	.3453	4.542E-03
I	1410(350)	17.39	16.48	6.831E-03	.2628	9.025E-03	.3472	8.677E-03	.3338	4.391E-03
>	3161(350)	17.39	16.48	6.831E-03	.2628	9.025E-03	.3472	8.677E-03	.3338	4.391E-03
I	1411(350)	18.47	17.56	6.618E-03	.2546	8.744E-03	.3364	8.407E-03	.3234	4.254E-03
>	3162(350)	18.47	17.56	6.618E-03	.2546	8.744E-03	.3364	8.407E-03	.3234	4.254E-03
I	1412(350)	19.52	18.61	6.428E-03	.2473	8.494E-03	.3268	8.168E-03	.3142	4.132E-03
>	3163(350)	19.52	18.61	6.428E-03	.2473	8.494E-03	.3268	8.168E-03	.3142	4.132E-03
I	1413(350)	20.57	19.66	6.254E-03	.2406	8.264E-03	.3179	7.945E-03	.3057	4.020E-03
>	3164(350)	20.57	19.66	6.254E-03	.2406	8.264E-03	.3179	7.945E-03	.3057	4.020E-03
I	1414(350)	21.62	20.71	6.093E-03	.2344	8.051E-03	.3098	7.740E-03	.2978	3.917E-03
>	3165(350)	21.62	20.71	6.093E-03	.2344	8.051E-03	.3098	7.740E-03	.2978	3.917E-03
I	1415(350)	22.67	21.74	5.944E-03	.2287	7.854E-03	.3022	7.551E-03	.2905	3.821E-03
>	3166(350)	22.67	21.74	5.944E-03	.2287	7.854E-03	.3022	7.551E-03	.2905	3.821E-03
I	1416(350)	23.75	22.84	5.803E-03	.2232	7.667E-03	.2950	7.371E-03	.2836	3.730E-03
>	3167(350)	23.75	22.84	5.803E-03	.2232	7.667E-03	.2950	7.371E-03	.2836	3.730E-03
		24.65		MODEL HAS LEFT CENTERLINE						
I	1417(350)	24.80	23.89	5.673E-03	.2183	7.496E-03	.2884	7.207E-03	.2773	3.647E-03
>	3168(350)	24.80	23.89	5.673E-03	.2183	7.496E-03	.2884	7.207E-03	.2773	3.647E-03
I	1418(350)	25.87	24.96	5.550E-03	.2135	7.333E-03	.2821	7.050E-03	.2712	3.568E-03
>	3169(350)	25.87	24.96	5.550E-03	.2135	7.333E-03	.2821	7.050E-03	.2712	3.568E-03

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VKIH-626 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
32	11	TRIP				>	.110	.031	1.179E 06	6.430E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	552.5	1316	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
95.5	.057	2.550	3027	5.010E-05	7.693E-08	2.492E 06	2.599E-02	1.706E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	TRAN(TO)	BETA(TO)
STCE(S)	3CP4					
SG	3C87	350	85	.0652	3.439E-01	4.2529E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.9120)	H(.9120)/HREF	ST(TO)
I	1619(350)	26.53	26.02	5.437E-03	.2092	7.183E-03	.2764	6.906E-03	.2657	3.495E-03
>	3170(350)	26.53	26.02	5.437E-03	.2092	7.183E-03	.2764	6.906E-03	.2657	3.495E-03
I	1620(350)	26.00	27.05	5.327E-03	.2050	7.039E-03	.2708	6.767E-03	.2604	3.425E-03
>	3171(350)	26.00	27.05	5.327E-03	.2050	7.039E-03	.2708	6.767E-03	.2604	3.425E-03
I	1621(350)	25.05	28.14	5.227E-03	.2011	6.906E-03	.2657	6.640E-03	.2555	3.360E-03
>	3172(350)	25.05	28.14	5.227E-03	.2011	6.906E-03	.2657	6.640E-03	.2555	3.360E-03

387

GP33

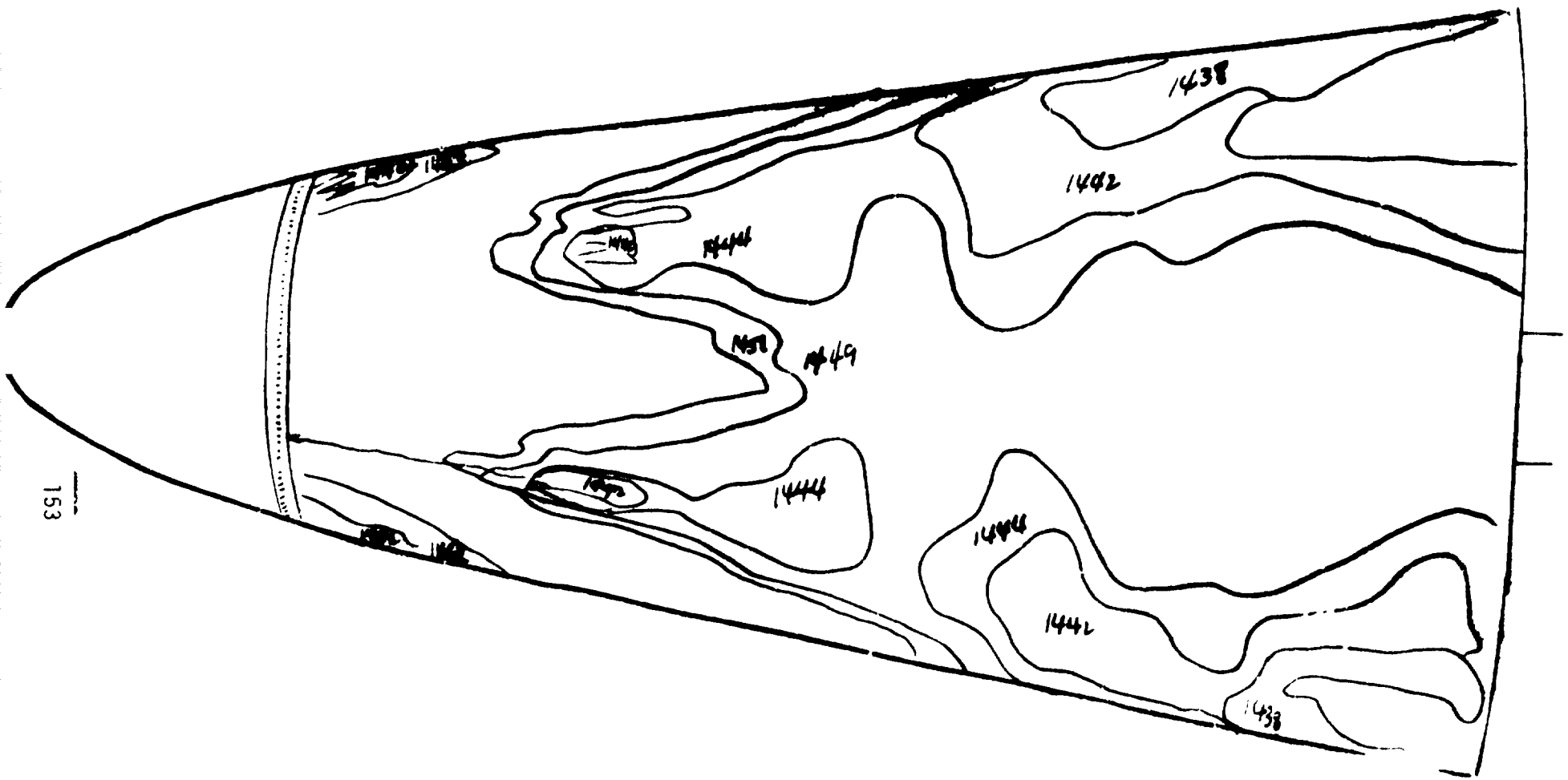
555 PSIA

860°F

$T_{PC} = 350°F$

$\alpha = 20°$

1427 KT FR ℄



NASA-R1 OM 56 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-76 PAGE 1

VON KARMAN GAS DYNAMICS FACILITY

V41H-R24 50 INCH HYPERSONIC TUNNEL B

WRCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	X/L	DIA.	REX	REO
33	11	TRIP				>	.110	.091	1.183E 06	6.462E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.0	1318	14.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SIREF (RE .040 FT)
98.7	.057	2.546	3830	5.433E-05	7.700E-08	2.501E 06	2.408E-02	1.702E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
TOP(T)	3C26					
SIDE(S)	3C27	300	87	.0636	2.763E-01	3.1611E-01

36

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1 1424(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
> 3175(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.55							
1 1425(300)	2.55	1.48	1.551E-02	.5969	1.997E-02	.7689	2.046E-02	.7835	9.945E-03
> 3176(300)	2.55	1.48	1.551E-02	.5969	1.997E-02	.7689	2.046E-02	.7835	9.945E-03
1 1426(300)	3.60	2.73	1.217E-02	.4685	1.564E-02	.6006	1.603E-02	.6144	7.799E-03
> 3177(300)	3.60	2.73	1.217E-02	.4685	1.564E-02	.6006	1.603E-02	.6144	7.799E-03
36		3.82							
1 1427(300)	4.67	3.81	1.030E-02	.3951	1.327E-02	.5087	1.357E-02	.5204	6.605E-03
> 3178(300)	4.67	3.81	1.030E-02	.3951	1.327E-02	.5087	1.357E-02	.5204	6.605E-03
1 1428(300)	5.73	4.88	9.122E-03	.3497	1.174E-02	.4503	1.201E-02	.4607	5.847E-03
> 3179(300)	5.73	4.88	9.122E-03	.3497	1.174E-02	.4503	1.201E-02	.4607	5.847E-03
1 1429(300)	6.80	5.93	8.253E-03	.3164	1.063E-02	.4074	1.087E-02	.4168	5.290E-03
> 3180(300)	6.80	5.93	8.253E-03	.3164	1.063E-02	.4074	1.087E-02	.4168	5.290E-03
1 1430(300)	7.88	7.01	7.543E-03	.2911	9.776E-03	.3748	1.000E-02	.3835	4.867E-03
> 3181(300)	7.88	7.01	7.543E-03	.2911	9.776E-03	.3748	1.000E-02	.3835	4.867E-03
1 1431(300)	8.93	8.06	7.081E-03	.2719	9.116E-03	.3495	9.327E-03	.3576	4.539E-03
> 3182(300)	8.93	8.06	7.081E-03	.2719	9.116E-03	.3495	9.327E-03	.3576	4.539E-03
1 1432(300)	9.98	9.11	6.660E-03	.2556	8.574E-03	.3288	8.772E-03	.3363	4.269E-03
> 3183(300)	9.98	9.11	6.660E-03	.2556	8.574E-03	.3288	8.772E-03	.3363	4.269E-03
1 1433(300)	11.03	10.16	6.306E-03	.2418	8.119E-03	.3113	8.306E-03	.3185	4.042E-03
> 3184(300)	11.03	10.16	6.306E-03	.2418	8.119E-03	.3113	8.306E-03	.3185	4.042E-03
1 1434(300)	12.11	11.24	5.947E-03	.2299	7.720E-03	.2960	7.898E-03	.3028	3.844E-03
> 3185(300)	12.11	11.24	5.947E-03	.2299	7.720E-03	.2960	7.898E-03	.3028	3.844E-03
1 1435(300)	13.16	12.29	5.745E-03	.2199	7.383E-03	.2831	7.553E-03	.2896	3.676E-03
> 3186(300)	13.16	12.29	5.745E-03	.2199	7.383E-03	.2831	7.553E-03	.2896	3.676E-03

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V414-824 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	RED
33	11	TRIP				5	.110	.091	1.183E 06	6.462E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.0	1318	10.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	STREF (HR .040 FT)
95.7	.057	2.546	3833	5.033E-05	7.706E-08	2.301E 06	2.608E-02	1.702E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	TRAN(TO)	BETA(TO)
SICE(S)	3084					
56	3087	300	87	.0636	7.763E-01	3.1611E-01

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1 1436(300)	14.24	13.37	5.449E-03	.2108	7.080E-03	.2714	7.243E-03	.2777	3.525E-03
5 3187(300)	14.24	13.37	5.439E-03	.2109	7.080E-03	.2714	7.243E-03	.2777	3.525E-03
1 1437(300)	15.29	14.42	5.245E-03	.2030	6.817E-03	.2614	6.974E-03	.2674	3.394E-03
5 3188(300)	15.29	14.42	5.245E-03	.2030	6.817E-03	.2614	6.974E-03	.2674	3.394E-03
1 1438(300)	16.34	15.47	5.112E-03	.1960	6.581E-03	.2523	6.733E-03	.2581	3.276E-03
5 3189(300)	16.34	15.47	5.112E-03	.1960	6.581E-03	.2523	6.733E-03	.2581	3.276E-03
1 1439(300)	17.41	16.55	4.943E-03	.1895	6.363E-03	.2440	6.510E-03	.2496	3.168E-03
5 3190(300)	17.41	16.55	4.943E-03	.1895	6.363E-03	.2440	6.510E-03	.2496	3.168E-03
1 1440(300)	18.47	17.62	4.743E-03	.1838	6.1[illegible]8E-03	.2366	6.313E-03	.2420	3.072E-03
5 3191(300)	18.47	17.62	4.743E-03	.1838	6.1[illegible]8E-03	.2366	6.313E-03	.2420	3.072E-03
1 1441(300)	19.54	18.67	4.652E-03	.1786	5.990E-03	.2297	6.128E-03	.2350	2.982E-03
5 3192(300)	19.54	18.67	4.652E-03	.1786	5.990E-03	.2297	6.128E-03	.2350	2.982E-03
1 1442(300)	20.59	19.72	4.527E-03	.1736	5.824E-03	.2235	5.962E-03	.2286	2.902E-03
5 3193(300)	20.59	19.72	4.527E-03	.1736	5.824E-03	.2235	5.962E-03	.2286	2.902E-03
1 1443(300)	21.67	20.8[illegible]	4.408E-03	.1690	5.675E-03	.2176	5.806E-03	.2226	2.826E-03
5 3194(300)	21.67	20.8[illegible]	4.408E-03	.1690	5.675E-03	.2176	5.806E-03	.2226	2.826E-03
1 1444(300)	22.72	21.85	4.301E-03	.1649	5.537E-03	.2123	5.665E-03	.2172	2.757E-03
5 3195(300)	22.72	21.85	4.301E-03	.1649	5.537E-03	.2123	5.665E-03	.2172	2.757E-03
1 1445(300)	23.77	22.9[illegible]	4.201E-03	.1611	5.409E-03	.2074	5.533E-03	.2122	2.693E-03
5 3196(300)	23.77	22.9[illegible]	4.201E-03	.1611	5.409E-03	.2074	5.533E-03	.2122	2.693E-03
1 1446(300)	24.85	23.98	4.106E-03	.1574	5.284E-03	.2027	5.408E-03	.2073	2.632E-03
5 3197(300)	24.85	23.98	4.106E-03	.1574	5.284E-03	.2027	5.408E-03	.2073	2.632E-03
1 1447(300)	25.92	25.06	4.016E-03	.1540	5.171E-03	.1983	5.290E-03	.2028	2.574E-03
5 3198(300)	25.92	25.06	4.016E-03	.1540	5.171E-03	.1983	5.290E-03	.2028	2.574E-03
1 1448(300)	26.98	26.11	3.935E-03	.1509	5.066E-03	.1942	5.183E-03	.1987	2.522E-03
5 3199(300)	26.98	26.11	3.935E-03	.1509	5.066E-03	.1942	5.183E-03	.1987	2.522E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
39	11	TRIM				S	.110	.031	1.193E 06	6.462E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.0	1318	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
95.7	.057	2.568	3830	5.033E-05	7.706E-08	2.501E 06	2.408E-02	1.702E-02

CAPPA (DEG F)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHLACAR)	TBAR(TO)	BETA(TO)
	3084					
>IDE(S)	3087	300	87	.0036	2.763E-01	3.161E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	1449(300)	28.03	27.16	3.8[illegible]E-03	.1479	4.987E-03	.1906	5.081E-03	.1968	2.473E-03
>	3200(300)	28.03	27.16	3.8[illegible]E-03	.1479	4.987E-03	.1906	5.081E-03	.1968	2.473E-03
I	1450(300)	29.10	28.23	3.7[illegible]E-03	.1451	4.871E-03	.1868	4.984E-03	.1911	2.425E-03
>	3201(300)	29.10	28.23	3.7[illegible]E-03	.1451	4.871E-03	.1868	4.984E-03	.1911	2.425E-03
I	1451(300)	30.15	29.29	3.715E-03	.1424	4.783E-03	.1836	4.893E-03	.1876	2.381E-03
>	3202(300)	30.15	29.29	3.715E-03	.1424	4.783E-03	.1836	4.893E-03	.1876	2.381E-03
I	1452(300)	31.23	30.34	3.6[illegible]E-03	.1399	4.697E-03	.1801	4.806E-03	.1843	2.339E-03
>	3203(300)	31.23	30.34	3.6[illegible]E-03	.1399	4.697E-03	.1801	4.806E-03	.1843	2.339E-03
I	1453(300)	32.28	31.41	3.5[illegible]E-03	.1375	4.618E-03	.1771	4.725E-03	.1812	2.299E-03
>	3204(300)	32.28	31.41	3.5[illegible]E-03	.1375	4.618E-03	.1771	4.725E-03	.1812	2.299E-03
I	1454(300)	33.33	32.44	3.529E-03	.1353	4.543E-03	.1742	4.648E-03	.1782	2.262E-03
>	3205(300)	33.33	32.44	3.529E-03	.1353	4.543E-03	.1742	4.648E-03	.1782	2.262E-03
I	1455(300)	34.38	33.52	3.473E-03	.1332	4.471E-03	.1714	4.574E-03	.1754	2.226E-03
>	3206(300)	34.38	33.52	3.473E-03	.1332	4.471E-03	.1714	4.574E-03	.1754	2.226E-03
I	1456(300)	35.46	34.59	3.418E-03	.1311	4.401E-03	.1687	4.502E-03	.1726	2.191E-03
>	3207(300)	35.46	34.59	3.418E-03	.1311	4.401E-03	.1687	4.502E-03	.1726	2.191E-03
I	1457(300)	36.54	35.67	3.368E-03	.1291	4.334E-03	.1662	4.434E-03	.1700	2.158E-03
>	3208(300)	36.54	35.67	3.368E-03	.1291	4.334E-03	.1662	4.434E-03	.1700	2.158E-03
I	1458(300)	37.59	36.72	3.318E-03	.1272	4.272E-03	.1638	4.370E-03	.1676	2.127E-03
>	3209(300)	37.59	36.72	3.318E-03	.1272	4.272E-03	.1638	4.370E-03	.1676	2.127E-03
I	1459(300)	38.66	37.80	3.270E-03	.1254	4.210E-03	.1614	4.307E-03	.1652	2.096E-03
>	3210(300)	38.66	37.80	3.270E-03	.1254	4.210E-03	.1614	4.307E-03	.1652	2.096E-03
I	1460(300)	39.71	38.85	3.226E-03	.1237	4.153E-03	.1592	4.249E-03	.1629	2.068E-03
>	3211(300)	39.71	38.85	3.226E-03	.1237	4.153E-03	.1592	4.249E-03	.1629	2.068E-03
I	1461(300)	40.79	39.92	3.182E-03	.1220	4.097E-03	.1571	4.191E-03	.1607	2.040E-03
>	3212(300)	40.79	39.92	3.182E-03	.1220	4.097E-03	.1571	4.191E-03	.1607	2.040E-03

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	MED
31	11	TRIP				S	.110	.031	1.183E 06	6.462E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.99	556.0	1318	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (W= .040 FT)	STREF (W= .040 FT)
95.7	.057	2.596	4830	5.433E-05	7.705E-08	2.501E 06	2.608E-02	1.702E-02

CAMERA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACA)	TRAN(TO)	BETA(TO)
(OF(T))	3086					
STLE(S)	3087	300	87	.0636	2.763E-01	3.1611E-01
36						

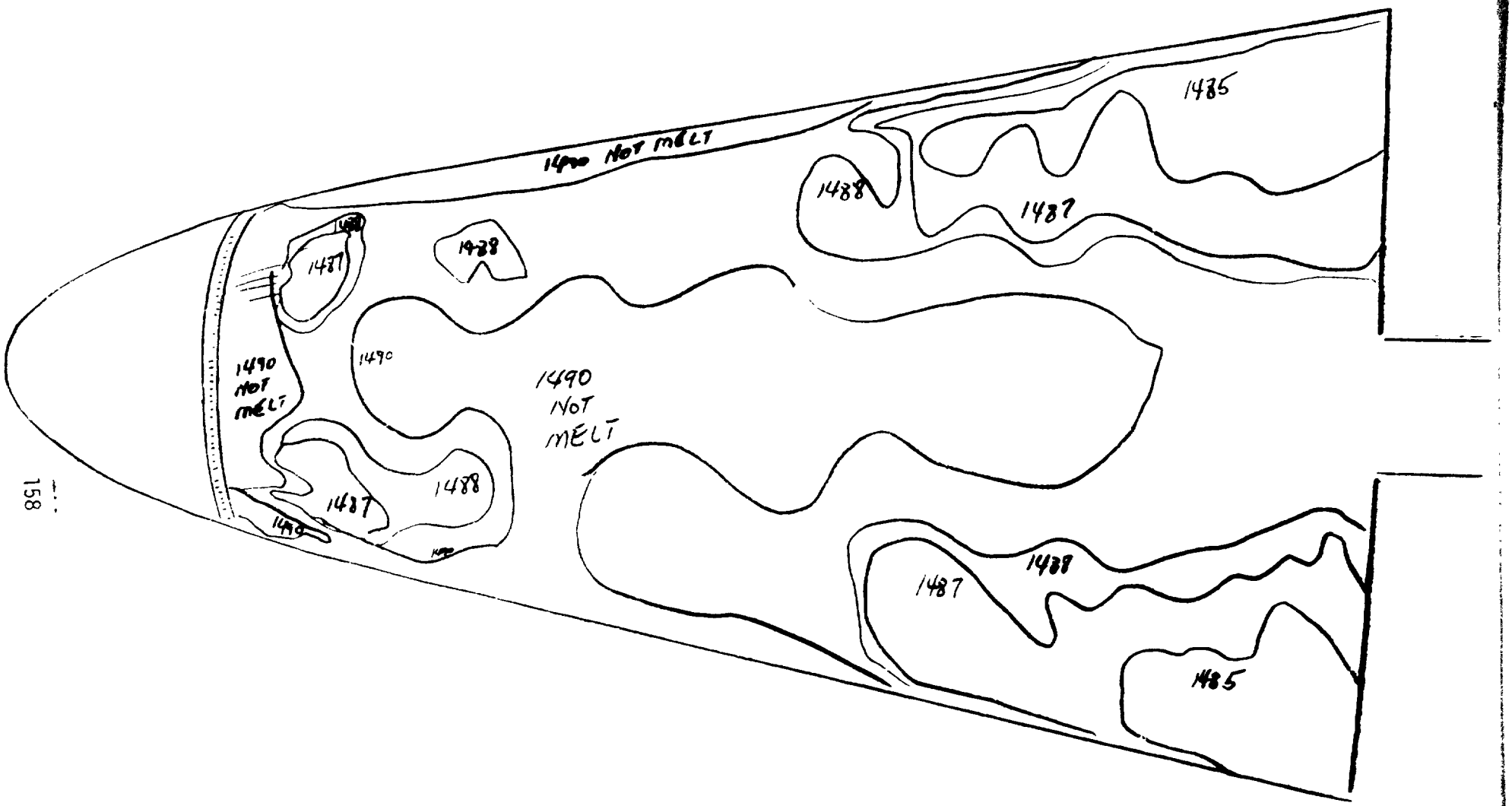
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	1462(300)	41.87	41.00	3.140E-03	.1204	4.042E-03	.1550	4.136E-03	.1586	2.013E-03
S	3213(300)	41.87	41.00	3.140E-03	.1204	4.042E-03	.1550	4.136E-03	.1586	2.013E-03
		42.02		MODEL WAS LEFT CENTERLINE						
I	1463(300)	42.52	42.05	3.100E-03	.1189	3.992E-03	.1530	4.084E-03	.1566	1.987E-03
S	3214(300)	42.52	42.05	3.100E-03	.1189	3.992E-03	.1530	4.084E-03	.1566	1.987E-03
I	1464(300)	43.57	43.10	3.082E-03	.1174	3.963E-03	.1512	4.034E-03	.1547	1.963E-03
S	3215(300)	43.57	43.10	3.082E-03	.1174	3.963E-03	.1512	4.034E-03	.1547	1.963E-03
I	1465(300)	45.65	44.18	3.065E-03	.1169	3.894E-03	.1493	3.984E-03	.1528	1.939E-03
S	3216(300)	45.65	44.18	3.065E-03	.1169	3.894E-03	.1493	3.984E-03	.1528	1.939E-03
S	3217(300)	45.10	45.23	2.949E-03	.1146	3.849E-03	.1476	3.938E-03	.1510	1.916E-03
I	1466(300)	45.12	45.25	2.948E-03	.1145	3.844E-03	.1475	3.936E-03	.1509	1.916E-03
I	1467(300)	47.17	46.31	2.955E-03	.1133	3.804E-03	.1458	3.891E-03	.1492	1.894E-03
S	3218(300)	47.17	46.31	2.955E-03	.1133	3.804E-03	.1458	3.891E-03	.1492	1.894E-03

387
Gp 34

490 PSIA
850 °F

T_{PC} = 350°F $\alpha = 30$

1473 1st Fr ℄



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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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WRLUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
36	11	TRIP				5	.110	.031	1.060E 06	5.707E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	490.1	1305	30.03	-.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RN= .040 FT)	SREF (RN= .040 FT)
95.0	.051	2.23	3811	.496E-05	7.650E-06	2.740E 06	2.449E-02	1.799E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUACRA)	TRAN(TO)	BETA(TO)
SICE(S)	3084					
>6	3087	350	99	.0652	3.452E-01	4.2752E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
<	1672(350)	1.47		MODEL HAS NOT REACHED CENTERLINE						
>	3221(350)	1.47		MODEL HAS NOT REACHED CENTERLINE						
IN-RECT TIME =			1.02							
<	1671(350)	2.55	1.64	2.179E-02	.8494	2.840E-02	1.1802	2.777E-02	1.1338	1.568E-02
>	3222(350)	2.55	1.64	2.179E-02	.8495	2.840E-02	1.1802	2.777E-02	1.1336	1.568E-02
<	1672(350)	3.60	2.65	1.760E-02	.6962	2.256E-02	.9210	2.167E-02	.8848	1.223E-02
>	3223(350)	3.60	2.69	1.760E-02	.6962	2.256E-02	.9210	2.167E-02	.8848	1.223E-02
>6			3.85							
<	1673(350)	4.67	3.74	1.437E-02	.5466	1.906E-02	.7783	1.831E-02	.7477	1.034E-02
>	3224(350)	4.67	3.74	1.437E-02	.5466	1.906E-02	.7783	1.831E-02	.7477	1.034E-02
<	1674(350)	5.73	4.83	1.270E-02	.5187	1.685E-02	.6881	1.619E-02	.6610	9.140E-03
>	3225(350)	5.73	4.82	1.270E-02	.5187	1.685E-02	.6881	1.619E-02	.6610	9.140E-03
<	1675(350)	6.80	5.89	1.146E-02	.4683	1.526E-02	.6221	1.464E-02	.5976	8.263E-03
>	3226(350)	6.80	5.89	1.146E-02	.4683	1.526E-02	.6221	1.464E-02	.5976	8.263E-03
<	1676(350)	7.85	6.94	1.058E-02	.4320	1.403E-02	.5731	1.346E-02	.5505	7.612E-03
>	3227(350)	7.85	6.94	1.058E-02	.4320	1.403E-02	.5731	1.346E-02	.5505	7.612E-03
<	1677(350)	8.93	8.02	9.843E-03	.4019	1.306E-02	.5332	1.255E-02	.5123	7.083E-03
>	3228(350)	8.93	8.02	9.843E-03	.4019	1.306E-02	.5332	1.255E-02	.5123	7.083E-03
<	1678(350)	9.98	9.07	9.255E-03	.3779	1.228E-02	.5014	1.180E-02	.4817	6.660E-03
>	3229(350)	9.98	9.07	9.255E-03	.3779	1.228E-02	.5014	1.180E-02	.4817	6.660E-03
<	1679(350)	11.06	10.15	8.751E-03	.3573	1.161E-02	.4741	1.115E-02	.4554	6.296E-03
>	3230(350)	11.06	10.15	8.751E-03	.3573	1.161E-02	.4741	1.115E-02	.4554	6.296E-03
<	1680(350)	12.13	11.22	8.321E-03	.3398	1.104E-02	.4508	1.060E-02	.4330	5.987E-03
>	3231(350)	12.13	11.22	8.321E-03	.3398	1.104E-02	.4508	1.060E-02	.4330	5.987E-03
<	1681(350)	13.18	12.27	7.956E-03	.3249	1.056E-02	.4310	1.014E-02	.4141	5.725E-03
>	3232(350)	13.18	12.27	7.956E-03	.3249	1.056E-02	.4310	1.014E-02	.4141	5.725E-03

GRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
36	11	TRIM				3	.110	.031	1.060E 06	5.787E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	489.1	1305	30.03	-.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	SIREF (RE .060 FT)
95.0	.051	2.270	3811	4.698E-05	7.650E-08	2.240E 06	2.449E-02	1.799E-02

CAMERA	MOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
10F(T)	3694					
>IDE(S)	3287	350	99	.0652	3.452E-01	4.2752E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1482(350)	14.24	13.33	7.038E-03	.3114	1.013E-02	.4137	9.732E-03	.3974	5.494E-03
3	3232(350)	14.24	13.33	7.038E-03	.3114	1.013E-02	.4137	9.732E-03	.3974	5.494E-03
1	1483(350)	15.31	14.40	7.365E-03	.2949	9.745E-03	.3979	9.361E-03	.3823	5.285E-03
3	3234(350)	15.31	14.40	7.365E-03	.2949	9.745E-03	.3979	9.361E-03	.3823	5.285E-03
1	1484(350)	16.36	15.45	7.091E-03	.2945	9.408E-03	.3841	9.037E-03	.3690	5.102E-03
3	3235(350)	16.36	15.45	7.091E-03	.2945	9.408E-03	.3841	9.037E-03	.3690	5.102E-03
1	1485(350)	17.41	16.51	6.861E-03	.2832	9.103E-03	.3717	8.745E-03	.3571	4.937E-03
3	3236(350)	17.41	16.51	6.861E-03	.2832	9.103E-03	.3717	8.745E-03	.3571	4.937E-03
1	1486(350)	18.49	17.58	6.648E-03	.2715	8.820E-03	.3601	8.473E-03	.3460	4.784E-03
3	3237(350)	18.49	17.58	6.648E-03	.2715	8.820E-03	.3601	8.473E-03	.3460	4.784E-03
1	1487(350)	19.54	18.63	6.455E-03	.2637	8.568E-03	.3498	8.230E-03	.3361	4.647E-03
3	3238(350)	19.54	18.63	6.455E-03	.2637	8.568E-03	.3498	8.230E-03	.3361	4.647E-03
1	1488(350)	20.62	19.71	6.279E-03	.2564	8.338E-03	.3402	8.003E-03	.3268	4.518E-03
3	3239(350)	20.62	19.71	6.279E-03	.2564	8.338E-03	.3402	8.003E-03	.3268	4.518E-03
1	1489(350)	21.67	20.74	6.118E-03	.2498	8.117E-03	.3314	7.797E-03	.3184	4.402E-03
3	3240(350)	21.67	20.74	6.118E-03	.2498	8.117E-03	.3314	7.797E-03	.3184	4.402E-03
1	1490(350)	22.72	21.81	5.956E-03	.2437	7.919E-03	.3233	7.607E-03	.3106	4.295E-03
3	3241(350)	22.72	21.81	5.956E-03	.2437	7.919E-03	.3233	7.607E-03	.3106	4.295E-03
1	1491(350)	23.80	22.86	5.827E-03	.2379	7.738E-03	.3156	7.426E-03	.3032	4.192E-03
3	3242(350)	23.80	22.86	5.827E-03	.2379	7.738E-03	.3156	7.426E-03	.3032	4.192E-03
1	1492(350)	24.87	23.94	5.694E-03	.2325	7.555E-03	.3085	7.257E-03	.2963	4.097E-03
3	3243(350)	24.87	23.94	5.694E-03	.2325	7.555E-03	.3085	7.257E-03	.2963	4.097E-03
1	1493(350)	25.92	25.01	5.573E-03	.2276	7.394E-03	.3019	7.103E-03	.2900	4.010E-03
3	3244(350)	25.92	25.01	5.573E-03	.2276	7.394E-03	.3019	7.103E-03	.2900	4.010E-03
1	1494(350)	26.98	26.07	5.450E-03	.2229	7.244E-03	.2958	6.954E-03	.2841	3.929E-03
3	3245(350)	26.98	26.07	5.450E-03	.2229	7.244E-03	.2958	6.954E-03	.2841	3.929E-03

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
36	11	TRIP				5	.110	.031	1.040E 06	5.787E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENO	ROLL-MODEL	YAW
7.98	499.1	1305	30.03	-.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	SINEF (R= .040 FT)
95.0	.051	2.270	3811	4.496E-05	7.650E-08	2.240E 04	2.449E-02	1.799E-02

CAMERA IDE(T) SICE(S)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RRCACAA)	TRAN(TO)	BETA(TO)
36	3CP4 3C87	350	86	.9652	3.452E-01	4.2752E-01

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1495(350)	24.15	27.14	5.350E-03	.2185	7.098E-03	.2899	6.819E-03	.2784	3.850E-03
2	3246(350)	24.15	27.14	5.350E-03	.2185	7.098E-03	.2899	6.819E-03	.2784	3.850E-03
1	1496(350)	24.13	24.22	5.275E-03	.2153	6.962E-03	.2843	6.686E-03	.2731	3.776E-03
2	3247(350)	24.13	24.22	5.275E-03	.2153	6.962E-03	.2843	6.686E-03	.2731	3.776E-03
1	1497(350)	24.18	24.27	5.152E-03	.2104	6.836E-03	.2791	6.567E-03	.2681	3.707E-03
2	3248(350)	24.18	24.27	5.152E-03	.2104	6.836E-03	.2791	6.567E-03	.2681	3.707E-03
		30.68		MODEL WAS LEFT CENTERLINE						
2	3249(350)	31.23	31.32	5.026E-03	.2057	6.718E-03	.2742	6.452E-03	.2634	3.642E-03
1	1498(350)	31.25	31.35	5.026E-03	.2056	6.713E-03	.2741	6.449E-03	.2633	3.641E-03
1	1499(350)	32.31	31.40	4.975E-03	.2031	6.600E-03	.2695	6.340E-03	.2589	3.579E-03
2	3250(350)	32.31	31.40	4.975E-03	.2031	6.600E-03	.2695	6.340E-03	.2589	3.579E-03
1	1500(350)	33.36	32.45	4.875E-03	.1992	6.492E-03	.2651	6.237E-03	.2547	3.521E-03
2	3251(350)	33.36	32.47	4.875E-03	.1992	6.492E-03	.2651	6.237E-03	.2547	3.521E-03
1	1501(350)	34.43	33.52	4.814E-03	.1966	6.387E-03	.2608	6.136E-03	.2505	3.464E-03
2	3252(350)	34.43	33.52	4.814E-03	.1966	6.387E-03	.2608	6.136E-03	.2505	3.464E-03
1	1502(350)	35.49	34.57	4.741E-03	.1936	6.289E-03	.2568	6.042E-03	.2467	3.411E-03
2	3253(350)	35.49	34.57	4.741E-03	.1936	6.289E-03	.2568	6.042E-03	.2467	3.411E-03

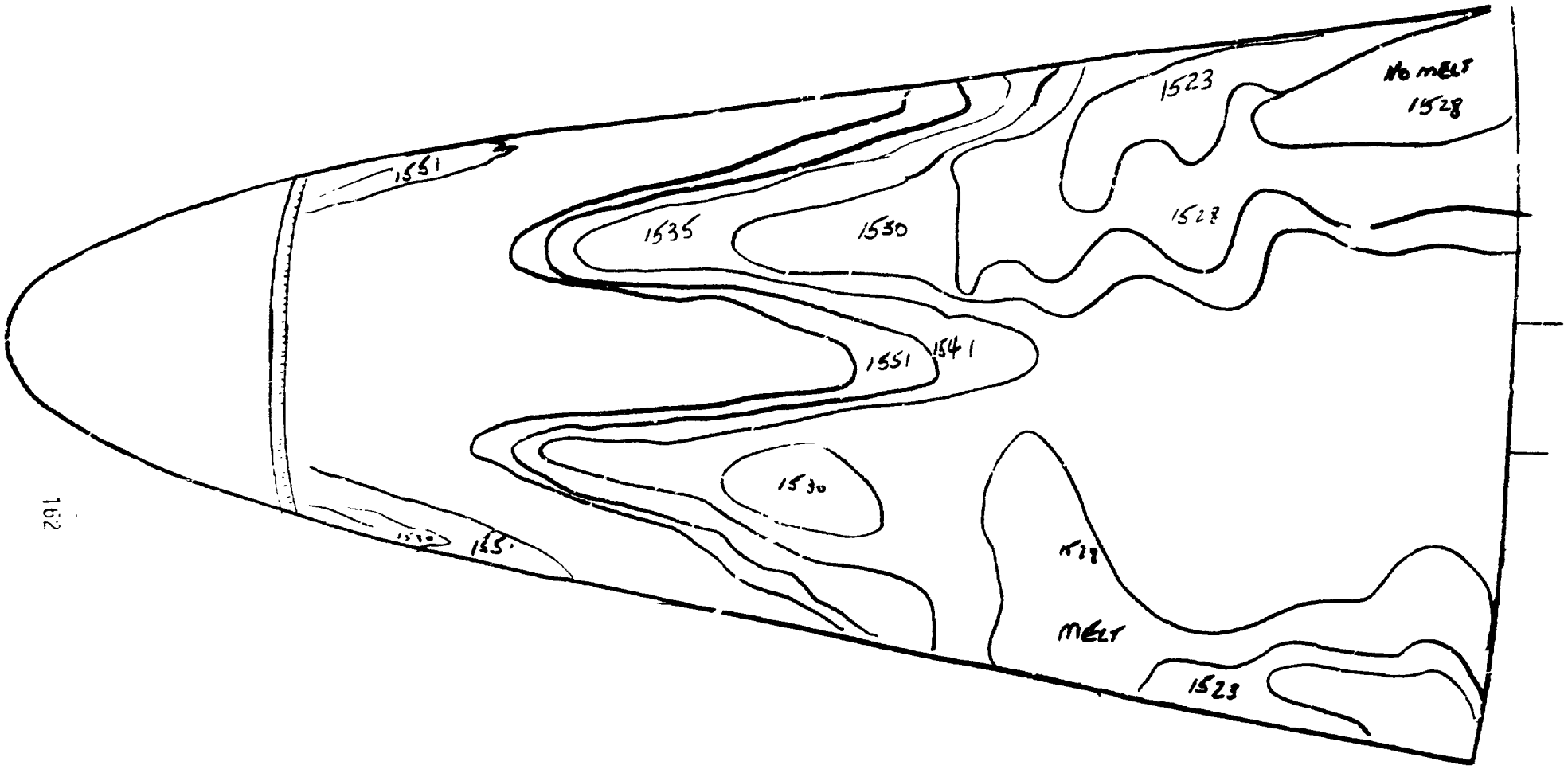
387
Gp 35

$T_{PC} = 300°F$

1508 1ST FR ℄

490 PSIA
850°F

$\alpha = 20°$



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NASA-MI   OH 56                          AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE                    10- 8-76        PAGE   1
V41H-A28                                  VON KARMAN GAS DYNAMICS FACILITY
                                            50 INCH HYPERSONIC TUNNEL B

GROUP  CONFIG          *** MODEL DESCRIPTION ***              GAP LOCATION/SIZE      TRIP LOCATION/SIZE       REK          RED
                                                              X/L   WIDTH  DEPTH     TYPE   X/L     DIA.
  34      11                        TRIP                                               5     .110    .031   1.042E 06   5.790E 03
                           MACH NO     PO(PSIA)   TO(DEG R)  ALPHA-MODEL  ALPHA-SECTOR  ALPHA-PREBEND  ROLL-MODEL  YAW
                             7.98       488.1      1362        20.00        10.00         30.00            0        0
 T-INF     P-INF    Q-INF     V-INF      RHO-INF         MU-INF         RE/FT        HREF           STREF
(DEG R)   (PSIA)   (PSIA)   (FT/SEC)   (SLUGS/FT3)    (LB-SEC/FT2)     (FT-1)      (HR .060 FT)   (HR .060 FT)
 94.6      .051     2.276     3804      4.592E-05      7.840E-08     2.245E 06     2.668E-02      1.797E-02
CAMERA         MODEL NO. PAINT TEMP (DEG F)   INITIAL TEMP (DEG F)   SQUARE ROOT (RHOCK)    TRAN(TO)    BETA(TO)
TOP(T)          3CR6
SIDE(S)         3CR7           300                    83                    .0636           2.954E-01   3.2400E-01
X6

   PIC NO      T AT CEILING      H(TO)        H(TO)/HREF    H(.9TO)     H(.9TO)/HREF  H(.892TO)  H(.892TO)/HREF  ST(TO)
1  1505(400)                   MODEL HAS NOT REACHED CENTERLINE
2  3250(400)        1          MODEL HAS NOT REACHED CENTERLINE
INJECT TIME =          1.42
1  1506(300)    2.55    1.66    1.634E-02     .6691      2.118E-02     .8662      2.166E-02     .8855      1.102E-02
2  3257(400)    2.55    1.66    1.634E-02     .6691      2.118E-02     .8662      2.166E-02     .8855      1.102E-02
1  1507(300)    3.60    2.69    1.274E-02     .5223      1.653E-02     .6751      1.692E-02     .6910      9.221E-03
2  3258(400)    3.60    2.69    1.274E-02     .5223      1.653E-02     .6751      1.692E-02     .6910      9.221E-03
X6                      3.65
1  1508(300)    4.67    3.74    1.041E-02     .4416      1.347E-02     .5705      1.430E-02     .5839      7.792E-03
2  3259(400)    4.67    3.74    1.041E-02     .4416      1.347E-02     .5705      1.430E-02     .5839      7.792E-03
1  1509(300)    5.73    4.82    9.555E-03     .3902      1.235E-02     .5044      1.284E-02     .5163      6.890E-03
2  3260(300)    5.73    4.82    9.555E-03     .3902      1.235E-02     .5044      1.284E-02     .5163      6.890E-03
2  3261(400)    6.78    5.87    8.644E-03     .3535      1.119E-02     .4570      1.145E-02     .4677      6.242E-03
1  1510(300)    6.80    5.88    8.634E-03     .3528      1.117E-02     .4560      1.143E-02     .4668      6.229E-03
1  1511(300)    7.85    6.92    7.951E-03     .3250      1.024E-02     .4201      1.053E-02     .4300      5.738E-03
2  3262(300)    7.85    6.94    7.957E-03     .3249      1.024E-02     .4201      1.053E-02     .4300      5.739E-03
1  1512(300)    8.90    7.99    7.416E-03     .3024      9.566E-03     .3915      9.811E-03     .4007      5.347E-03
2  3263(300)    8.90    7.99    7.416E-03     .3029      9.566E-03     .3915      9.811E-03     .4007      5.347E-03
1  1513(300)    9.96    9.05    6.971E-03     .2847      9.012E-03     .3681      9.223E-03     .3767      5.027E-03
2  3264(300)    9.96    9.05    6.971E-03     .2847      9.012E-03     .3681      9.223E-03     .3767      5.027E-03
1  1514(300)   11.03   10.12    6.535E-03     .2692      8.519E-03     .3479      8.714E-03     .3561      4.752E-03
2  3265(300)   11.03   10.12    6.539E-03     .2692      8.519E-03     .3479      8.714E-03     .3561      4.752E-03
1  1515(300)   12.08   11.17    6.213E-03     .2562      8.108E-03     .3312      8.294E-03     .3389      4.523E-03
2  3266(300)   12.08   11.17    6.213E-03     .2552      8.108E-03     .3312      8.294E-03     .3389      4.523E-03
1  1516(300)   13.16   12.26    5.941E-03     .2447      7.744E-03     .3163      7.925E-03     .3237      4.320E-03
2  3267(300)   13.16   12.26    5.941E-03     .2447      7.744E-03     .3163      7.925E-03     .3237      4.320E-03
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WRCUP	CONFIG	*** MODEL DESCRIPTION ***	CAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	HEB
35	11	TRIP				>	.110	.031	1.062E 06	5.799E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	489.1	1303	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SREF (RE .060 FT)
98.5	.051	2.270	1809	4.502E-05	7.640E-08	2.245E 06	2.448E-02	1.797E-02

ALPHA (DEG)	ROLL NO	PATH TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAXK)	TRAN(TO)	BETA(TO)
10P(T)	3084					
31UF(S)	3087	300	83	.0836	2.854E-01	3.296UE-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.992TO)	H(.992TO)/HREF	ST(TO)
I	1517(300)	14.21	13.35	5.743E-03	.2368	7.432E-03	.3035	7.606E-03	.3107	4.146E-03
>	3266(300)	14.21	13.35	5.743E-03	.2368	7.432E-03	.3035	7.606E-03	.3107	4.146E-03
I	1518(300)	15.29	14.36	5.530E-03	.2299	7.148E-03	.2919	7.316E-03	.2988	3.987E-03
>	3269(300)	15.29	14.36	5.530E-03	.2299	7.148E-03	.2919	7.316E-03	.2988	3.987E-03
I	1519(300)	16.36	15.43	5.310E-03	.2180	6.900E-03	.2818	7.062E-03	.2886	3.849E-03
>	3271(300)	16.36	15.43	5.310E-03	.2180	6.900E-03	.2818	7.062E-03	.2886	3.849E-03
I	1520(300)	17.39	16.46	5.165E-03	.2110	6.677E-03	.2727	6.833E-03	.2791	3.724E-03
>	3271(300)	17.39	16.46	5.165E-03	.2110	6.677E-03	.2727	6.833E-03	.2791	3.724E-03
I	1521(300)	18.47	17.54	5.066E-03	.2066	6.469E-03	.2642	6.621E-03	.2704	3.608E-03
>	3272(300)	18.47	17.54	5.066E-03	.2066	6.469E-03	.2642	6.621E-03	.2704	3.608E-03
I	1522(300)	19.54	18.63	4.955E-03	.1994	6.279E-03	.2565	6.427E-03	.2625	3.503E-03
>	3273(300)	19.54	18.63	4.955E-03	.1994	6.279E-03	.2565	6.427E-03	.2625	3.503E-03
I	1523(300)	20.59	19.68	4.765E-03	.1930	6.109E-03	.2495	6.253E-03	.2554	3.408E-03
>	3274(300)	20.59	19.68	4.765E-03	.1930	6.109E-03	.2495	6.253E-03	.2554	3.408E-03
I	1524(300)	21.64	20.73	4.655E-03	.1881	5.952E-03	.2431	6.092E-03	.2488	3.320E-03
>	3275(300)	21.64	20.73	4.655E-03	.1881	5.952E-03	.2431	6.092E-03	.2488	3.320E-03
I	1525(300)	22.72	21.81	4.430E-03	.1836	5.803E-03	.2370	5.940E-03	.2426	3.237E-03
>	3276(300)	22.72	21.81	4.430E-03	.1836	5.803E-03	.2370	5.940E-03	.2426	3.237E-03
I	1526(300)	23.77	22.86	4.345E-03	.1791	5.668E-03	.2315	5.802E-03	.2370	3.162E-03
>	3277(300)	23.77	22.86	4.345E-03	.1791	5.668E-03	.2315	5.802E-03	.2370	3.162E-03
I	1527(300)	24.85	23.94	4.248E-03	.1750	5.540E-03	.2242	5.670E-03	.2316	3.090E-03
>	3278(300)	24.85	23.94	4.248E-03	.1750	5.540E-03	.2242	5.670E-03	.2316	3.090E-03
I	1528(300)	25.90	24.99	4.145E-03	.1713	5.422E-03	.2214	5.549E-03	.2266	3.024E-03
>	3279(300)	25.90	24.99	4.145E-03	.1713	5.422E-03	.2214	5.549E-03	.2266	3.024E-03
I	1529(300)	26.98	26.07	4.107E-03	.1677	5.309E-03	.2168	5.433E-03	.2219	2.961E-03
>	3280(300)	26.98	26.07	4.107E-03	.1677	5.309E-03	.2168	5.433E-03	.2219	2.961E-03

V41H-H2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
39	11	TRIP				5	.110	.091	1.062E 06	5.799E 03

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	489.1	1303	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH= .040 FT)	STREF (RH= .040 FT)
96.5	.051	2.270	3809	4.502E-05	7.640E-08	2.245E 06	2.448E-02	1.797E-02

CAPPA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCRCAN)	TRAR(TO)	BETA(TO)
10E(1)	3C84					
5IEE(5)	3C87	300	A3	.0636	2.854E-01	3.296HE-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	153(400)	24.65	27.14	4.025E-03	.1644	5.202E-03	.2125	5.325E-03	.2175	2.902E-03
5	3281(400)	24.65	27.14	4.025E-03	.1644	5.202E-03	.2125	5.325E-03	.2175	2.982E-03
1	1531(400)	24.10	24.19	3.999E-03	.1613	5.104E-03	.2085	5.224E-03	.2134	2.847E-03
5	3282(400)	24.10	24.19	3.999E-03	.1613	5.104E-03	.2085	5.224E-03	.2134	2.847E-03
1	1532(400)	30.15	23.24	3.877E-03	.1584	5.012E-03	.2047	5.130E-03	.2095	2.796E-03
5	3283(400)	30.15	23.24	3.877E-03	.1584	5.012E-03	.2047	5.130E-03	.2095	2.796E-03
1	1533(400)	31.23	31.33	3.803E-03	.1555	4.922E-03	.2010	5.036E-03	.2058	2.746E-03
5	3284(400)	31.23	31.33	3.803E-03	.1555	4.922E-03	.2010	5.036E-03	.2058	2.746E-03
1	1534(400)	32.28	31.37	3.744E-03	.1529	4.839E-03	.1976	4.953E-03	.2023	2.699E-03
5	3285(400)	32.28	31.37	3.744E-03	.1529	4.839E-03	.1976	4.953E-03	.2023	2.699E-03
1	1535(400)	33.26	32.65	3.681E-03	.1503	4.758E-03	.1943	4.870E-03	.1989	2.654E-03
5	3286(400)	33.26	32.65	3.681E-03	.1503	4.758E-03	.1943	4.870E-03	.1989	2.654E-03
1	1536(400)	34.43	33.52	3.621E-03	.1479	4.681E-03	.1912	4.791E-03	.1957	2.611E-03
5	3287(400)	34.43	33.52	3.621E-03	.1479	4.681E-03	.1912	4.791E-03	.1957	2.611E-03
1	1537(400)	35.49	34.57	3.566E-03	.1456	4.609E-03	.1883	4.718E-03	.1927	2.571E-03
5	3288(400)	35.49	34.57	3.566E-03	.1456	4.609E-03	.1883	4.718E-03	.1927	2.571E-03
1	1538(400)	36.56	35.65	3.512E-03	.1434	4.539E-03	.1854	4.646E-03	.1897	2.532E-03
5	3289(400)	36.56	35.65	3.512E-03	.1434	4.539E-03	.1854	4.646E-03	.1897	2.532E-03
1	1539(400)	37.61	36.76	3.461E-03	.1414	4.474E-03	.1827	4.579E-03	.1870	2.496E-03
5	3290(400)	37.61	36.76	3.461E-03	.1414	4.474E-03	.1827	4.579E-03	.1870	2.496E-03
1	1540(400)	38.66	37.75	3.412E-03	.1394	4.411E-03	.1802	4.515E-03	.1844	2.461E-03
5	3291(400)	38.66	37.75	3.412E-03	.1394	4.411E-03	.1802	4.515E-03	.1844	2.461E-03
1	1541(400)	39.74	38.83	3.365E-03	.1374	4.349E-03	.1776	4.452E-03	.1818	2.426E-03
5	3292(400)	39.74	38.83	3.365E-03	.1374	4.349E-03	.1776	4.452E-03	.1818	2.426E-03
1	1542(400)	40.79	39.88	3.320E-03	.1355	4.292E-03	.1753	4.393E-03	.1794	2.394E-03
5	3293(400)	40.79	39.88	3.320E-03	.1356	4.292E-03	.1753	4.393E-03	.1794	2.394E-03

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	HED
35	11	TRIP				S	.110	.031	1.0642E 06	5.7992 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTCN	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	489.1	1303	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RB .040 FT)	SIREF (RB .060 FT)
94.5	.051	2.270	3804	4.592E-05	7.608E-06	2.245E 06	2.448E-02	1.797E-02

CAMERA (DEG(T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
	3CR6					
>ILE(S)	3CR7	300	83	.0636	2.854E-01	3.296BE-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.992TO)	H(.992TO)/HREF	ST(TO)
I	1543(300)	41.67	42.98	3.276E-03	.1338	4.235E-03	.1730	4.335E-03	.1770	2.362E-03
>	3294(300)	41.67	41.94	3.276E-03	.1338	4.235E-03	.1730	4.335E-03	.1770	2.362E-03
I	1544(300)	42.52	42.01	3.245E-03	.1321	4.182E-03	.1708	4.280E-03	.1748	2.333E-03
>	3295(300)	42.52	42.01	3.245E-03	.1321	4.182E-03	.1708	4.280E-03	.1748	2.333E-03
I	1545(300)	43.59	43.07	3.144E-03	.1305	4.129E-03	.1685	4.226E-03	.1726	2.303E-03
>	3296(300)	43.59	43.07	3.144E-03	.1305	4.129E-03	.1686	4.226E-03	.1726	2.303E-03
I	1546(300)	44.05	44.14	3.146E-03	.1289	4.080E-03	.1666	4.176E-03	.1705	2.276E-03
>	3297(300)	44.05	44.14	3.146E-03	.1289	4.080E-03	.1666	4.176E-03	.1705	2.276E-03
I	1547(300)	44.12	45.21	3.118E-03	.1274	4.031E-03	.1646	4.126E-03	.1685	2.248E-03
>	3298(300)	44.12	45.21	3.118E-03	.1274	4.031E-03	.1646	4.126E-03	.1685	2.248E-03
I	1548(300)	47.17	45.26	3.083E-03	.1253	3.985E-03	.1627	4.074E-03	.1666	2.223E-03
>	3299(300)	47.17	45.26	3.083E-03	.1253	3.985E-03	.1627	4.074E-03	.1666	2.223E-03
I	1549(300)	48.25	47.34	3.047E-03	.1245	3.934E-03	.1609	4.032E-03	.1647	2.197E-03
>	3300(300)	48.25	47.34	3.047E-03	.1245	3.934E-03	.1609	4.032E-03	.1647	2.197E-03
>	3301(300)	49.30	48.39	3.014E-03	.1231	3.888E-03	.1591	3.988E-03	.1629	2.173E-03
I	1550(300)	49.33	48.62	3.013E-03	.1231	3.885E-03	.1591	3.987E-03	.1628	2.173E-03
		49.43		MODEL HAS LEFT CENTERLINE						
I	1551(300)	50.38	49.67	2.981E-03	.1218	3.854E-03	.1576	3.944E-03	.1611	2.150E-03
>	3302(300)	50.38	49.67	2.981E-03	.1218	3.854E-03	.1576	3.944E-03	.1611	2.150E-03
I	1552(300)	51.45	50.54	2.949E-03	.1205	3.812E-03	.1557	3.902E-03	.1594	2.127E-03
>	3303(300)	51.45	51.54	2.949E-03	.1205	3.812E-03	.1557	3.902E-03	.1594	2.127E-03
I	1553(300)	52.50	51.58	2.91[illegible]	.1192	3.773E-03	.1541	3.862E-03	.1577	2.105E-03
>	3304(300)	52.50	51.58	2.91[illegible]	.1192	3.773E-03	.1541	3.862E-03	.1577	2.105E-03
I	1554(300)	53.56	52.65	2.884E-03	.1180	3.735E-03	.1526	3.823E-03	.1561	2.084E-03
>	3305(300)	53.58	52.67	2.884E-03	.1180	3.735E-03	.1525	3.822E-03	.1561	2.083E-03

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VAIM-82A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	RER
35	11	TRIP				S	.110	.031	1.042E 06	5.799E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PRENEND	ROLL-MODEL	YAW
7.98	484.1	1303	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (IN .060 FT)	SIREF (IN .060 FT)
96.5	.271	2.273	3034	6.582E-05	7.640E-06	2.245E 06	2.448E-02	1.797E-02

CAPFEA (DEG)	ROLL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	TRAN(TO)	RETA(TO)
10F(T)	3LR6					
3ILE(S)	3L87	300	43	.5634	2.654E-01	3.2968E-01
36						

	PIC NO	TIME (SECS)	TIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.892TO)	H(.892TO)/HREF	ST(IN)
1	1555(90)	54.63	51.72	2.8[illegible]E-03	.1164	3.694E-03	.1510	3.785E-03	.1546	2.063E-03
2	3206(90)	54.63	51.72	2.8[illegible]E-03	.1164	3.694E-03	.1510	3.785E-03	.1546	2.063E-03

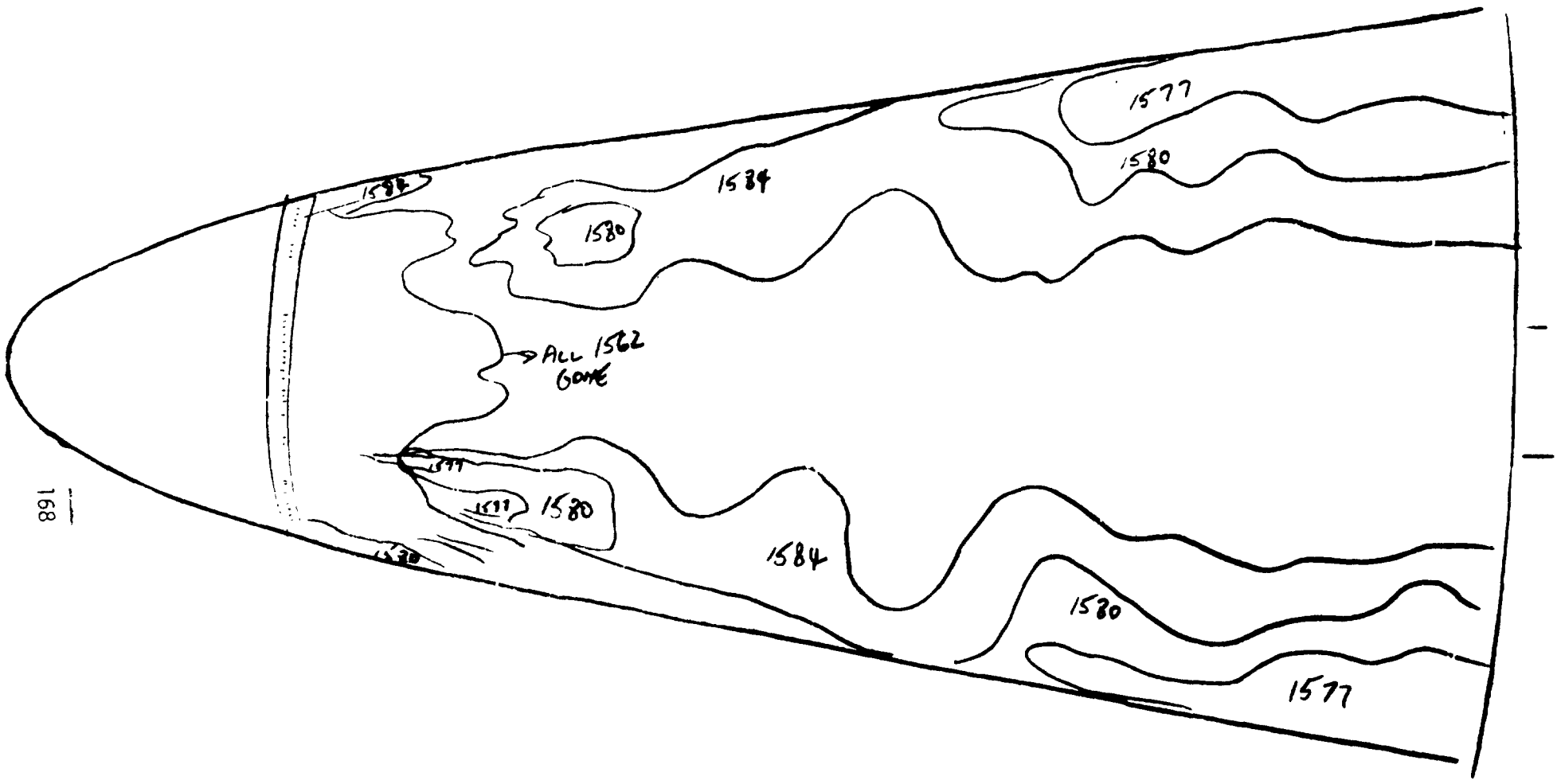
387
GP36

670 PSIA
870 °F

$T_{PC} = 350°F$

1561 1ST FR ℄

$\alpha = 20°$



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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GROUP CONFIG *** MODEL DESCRIPTION ***

GROUP	CONFIG	MODEL DESCRIPTION
36	11	TRIM

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	MEB	MED
			5	.110	.031	1.402E 06	7.656E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	668.5	1331	14.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (LBMSS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	SIREF (R= .040 FT)
96.7	.009	3.045	3649	5.092E-05	7.782E-08	2.564E 06	2.865E-02	1.561E-02

MODEL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAK*K)	TRAN(TO)	BETA(TO)
3CR6					
3C87	450	89	.0652	3.334E-01	4.0790E-01

PTC NO	TIME (ELTIME)		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1 1554(450)	1.07		MODEL HAS NOT REACHED CENTERLINE						
3 3304(450)	1.07		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.00							
1 1555(450)	2.55	1.65	2.070E-02	.7224	2.720E-02	.9495	2.749E-02	.9736	1.105E-02
3 3310(450)	2.55	1.65	2.070E-02	.7224	2.720E-02	.9495	2.749E-02	.9736	1.105E-02
1 1556(450)	3.60	2.71	1.081E-02	.5667	2.128E-02	.7422	2.180E-02	.7611	8.638E-03
3 3311(450)	3.60	2.71	1.081E-02	.5667	2.128E-02	.7422	2.180E-02	.7611	8.638E-03
3G		3.85							
1 1561(450)	4.67	3.79	1.309E-02	.4776	1.738E-02	.6277	1.846E-02	.6636	7.305E-03
3 3312(450)	4.67	3.79	1.309E-02	.4776	1.738E-02	.6277	1.846E-02	.6636	7.305E-03
1 1562(450)	5.75	4.85	1.207E-02	.4213	1.588E-02	.5537	1.627E-02	.5678	6.445E-03
3 3313(450)	5.75	4.85	1.207E-02	.4213	1.588E-02	.5537	1.627E-02	.5678	6.445E-03
1 1563(450)	6.80	5.91	1.094E-02	.3820	1.438E-02	.5020	1.475E-02	.5148	5.843E-03
3 3314(450)	6.80	5.91	1.094E-02	.3820	1.438E-02	.5020	1.475E-02	.5148	5.843E-03
1 1564(450)	7.85	6.96	1.006E-02	.3520	1.325E-02	.4626	1.359E-02	.4743	5.383E-03
3 3315(450)	7.85	6.96	1.006E-02	.3520	1.325E-02	.4626	1.359E-02	.4743	5.383E-03
1 1565(450)	8.93	8.03	9.383E-03	.3275	1.233E-02	.4305	1.264E-02	.4414	5.010E-03
3 3316(450)	8.93	8.03	9.383E-03	.3275	1.233E-02	.4305	1.264E-02	.4414	5.010E-03
1 1566(450)	10.01	9.11	8.611E-03	.3076	1.158E-02	.4042	1.187E-02	.4145	4.705E-03
3 3317(450)	10.01	9.11	8.611E-03	.3076	1.158E-02	.4042	1.187E-02	.4145	4.705E-03
1 1567(450)	11.06	10.14	8.363E-03	.2912	1.094E-02	.3820	1.124E-02	.3925	4.455E-03
3 3318(450)	11.06	10.14	8.363E-03	.2912	1.094E-02	.3820	1.124E-02	.3925	4.455E-03
1 1568(450)	12.11	11.2	7.942E-03	.2773	1.044E-02	.3644	1.070E-02	.3736	4.241E-03
3 3319(450)	12.11	11.21	7.942E-03	.2773	1.044E-02	.3644	1.070E-02	.3736	4.241E-03
1 1569(450)	13.18	12.29	7.567E-03	.2644	9.571E-03	.3341	1.022E-02	.3569	4.051E-03
3 3320(450)	13.18	12.29	7.567E-03	.2644	9.571E-03	.3341	1.022E-02	.3569	4.051E-03

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AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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GROUP CONFIG *** MODEL DESCRIPTION ***

36 11 TRIP

GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	MEB
			5	.110	.031	1.402E 06	7.656E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	6686.5	1331	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HWEF (IN .040 FT)	SINEF (IN .040 FT)
96.7	.889	3.045	3884	5.492E-05	7.782E-08	2.564E 06	2.865E-02	1.561E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	THAW(TO)	BETA(TO)
10K(T)	3684					
SILK(S)	3687	350	86	.0052	3.339E-01	4.0790E-01
SG						

	PIC NO	TIME (ELAPSE		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	1570(350)	14.24	13.34	7.242E-03	.2562	9.570E-03	.3361	9.813E-03	.3425	3.088E-03
5	3321(350)	14.24	13.34	7.242E-03	.2562	9.570E-03	.3361	9.813E-03	.3425	3.088E-03
1	1571(350)	15.21	14.42	7.006E-03	.2465	9.206E-03	.3213	9.439E-03	.3295	3.740E-03
5	3322(350)	15.21	14.42	7.006E-03	.2465	9.206E-03	.3213	9.439E-03	.3295	3.740E-03
1	1572(350)	16.36	15.47	6.702E-03	.2361	8.887E-03	.3102	9.113E-03	.3181	3.611E-03
5	3323(350)	16.36	15.47	6.702E-03	.2361	8.887E-03	.3102	9.113E-03	.3181	3.611E-03
1	1573(350)	17.44	16.56	6.539E-03	.2283	8.593E-03	.3000	8.812E-03	.3076	3.491E-03
5	3324(350)	17.44	16.56	6.539E-03	.2283	8.593E-03	.3000	8.812E-03	.3076	3.491E-03
1	1574(350)	18.52	17.65	6.326E-03	.2212	8.327E-03	.2907	8.538E-03	.2981	3.383E-03
5	3325(350)	18.52	17.65	6.326E-03	.2212	8.327E-03	.2907	8.538E-03	.2981	3.383E-03
1	1575(350)	19.57	18.67	6.155E-03	.2149	8.084E-03	.2824	8.294E-03	.2895	3.286E-03
5	3326(350)	19.57	18.67	6.155E-03	.2149	8.084E-03	.2824	8.294E-03	.2895	3.286E-03
1	1576(350)	20.62	19.72	5.945E-03	.2090	7.870E-03	.2747	8.070E-03	.2817	3.197E-03
5	3327(350)	20.62	19.72	5.945E-03	.2090	7.870E-03	.2747	8.070E-03	.2817	3.197E-03
1	1577(350)	21.69	20.80	5.832E-03	.2036	7.664E-03	.2675	7.854E-03	.2743	3.114E-03
5	3328(350)	21.69	20.80	5.832E-03	.2036	7.664E-03	.2675	7.854E-03	.2743	3.114E-03
1	1578(350)	22.75	21.85	5.642E-03	.1986	7.477E-03	.2610	7.667E-03	.2677	3.038E-03
5	3329(350)	22.75	21.85	5.642E-03	.1986	7.477E-03	.2610	7.667E-03	.2677	3.038E-03
1	1579(350)	23.80	22.90	5.557E-03	.1960	7.304E-03	.2550	7.486E-03	.2614	2.967E-03
5	3330(350)	23.80	22.90	5.557E-03	.1960	7.304E-03	.2550	7.486E-03	.2614	2.967E-03
1	1580(350)	24.87	23.98	5.431E-03	.1996	7.138E-03	.2492	7.314E-03	.2555	2.900E-03
5	3331(350)	24.87	23.98	5.431E-03	.1996	7.138E-03	.2492	7.314E-03	.2555	2.900E-03
1	1581(350)	25.92	25.03	5.318E-03	.1956	6.988E-03	.2439	7.164E-03	.2501	2.838E-03
5	3332(350)	25.92	25.03	5.318E-03	.1956	6.988E-03	.2439	7.164E-03	.2501	2.838E-03
1	1582(350)	26.98	24.08	5.205E-03	.1918	6.844E-03	.2389	7.018E-03	.2450	2.781E-03
5	3333(350)	26.98	24.08	5.205E-03	.1918	6.844E-03	.2389	7.018E-03	.2450	2.781E-03

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
36	11	TRIP				S	.110	.031	1.402E 06	7.656E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	668.5	1331	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	SIREF (IN .040 FT)
96.7	.054	3.045	3849	5.492E-05	7.782E-08	2.564E 06	2.465E-02	1.561E-02

CAPSULE	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRAN(TO)	BETA(TO)
10F(T)	3CP4					
31F(S)	3CP7	350	85	.0652	3.334E-01	4.0790E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.692TO)	H(.692TO)/HREF	ST(TO)
I	1583(450)	26.05	27.14	5.106E-03	.1742	6.707E-03	.2341	6.874E-03	.2401	2.725E-03
S	3334(450)	26.05	27.14	5.106E-03	.1742	6.707E-03	.2341	6.875E-03	.2401	2.725E-03
I	1584(450)	29.10	29.21	5.000E-03	.1744	6.581E-03	.2297	6.748E-03	.2356	2.674E-03
S	3335(450)	29.10	29.21	5.000E-03	.1744	6.581E-03	.2297	6.748E-03	.2356	2.674E-03
I	1585(450)	31.18	29.28	4.915E-03	.1716	6.454E-03	.2255	6.623E-03	.2312	2.624E-03
S	3336(450)	31.18	29.28	4.915E-03	.1716	6.454E-03	.2255	6.623E-03	.2312	2.624E-03
I	1586(450)	31.63	30.33	4.826E-03	.1686	6.346E-03	.2215	6.507E-03	.2272	2.578E-03
S	3337(450)	31.63	30.33	4.826E-03	.1686	6.346E-03	.2215	6.507E-03	.2272	2.578E-03
I	1587(450)	32.31	31.41	4.745E-03	.1656	6.236E-03	.2177	6.395E-03	.2232	2.534E-03
S	3338(450)	32.31	31.41	4.745E-03	.1656	6.236E-03	.2177	6.395E-03	.2232	2.534E-03
I	1588(450)	33.38	32.49	4.666E-03	.1629	6.132E-03	.2141	6.288E-03	.2195	2.491E-03
S	3339(450)	33.38	32.49	4.666E-03	.1629	6.132E-03	.2141	6.288E-03	.2195	2.491E-03
I	1589(450)	34.43	33.54	4.592E-03	.1603	6.035E-03	.2107	6.189E-03	.2160	2.452E-03
S	3340(450)	34.43	33.54	4.592E-03	.1603	6.035E-03	.2107	6.189E-03	.2160	2.452E-03
I	1590(450)	35.49	34.59	4.522E-03	.1579	5.943E-03	.2075	6.094E-03	.2127	2.414E-03
S	3341(450)	35.49	34.59	4.522E-03	.1579	5.943E-03	.2075	6.094E-03	.2127	2.414E-03
I	1591(450)	36.56	35.67	4.453E-03	.1555	5.853E-03	.2043	6.001E-03	.2095	2.378E-03
S	3342(450)	36.56	35.67	4.453E-03	.1555	5.853E-03	.2043	6.001E-03	.2095	2.378E-03
I	1592(450)	37.64	36.74	4.388E-03	.1532	5.766E-03	.2013	5.913E-03	.2064	2.343E-03
S	3343(450)	37.64	36.74	4.388E-03	.1532	5.766E-03	.2013	5.913E-03	.2064	2.343E-03
I	1593(450)	38.69	37.79	4.326E-03	.1510	5.685E-03	.1985	5.830E-03	.2035	2.310E-03
S	3344(450)	38.69	37.79	4.326E-03	.1510	5.685E-03	.1985	5.830E-03	.2035	2.310E-03
I	1594(450)	39.74	38.84	4.267E-03	.1490	5.608E-03	.1958	5.750E-03	.2007	2.278E-03
S	3345(450)	39.74	38.84	4.267E-03	.1490	5.608E-03	.1958	5.750E-03	.2007	2.278E-03
		40.87		MODEL HAS LEFT CENTERLINE						

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REX	REW
36	11	TRIP				5	.110	.031	1.402E 06	7.656E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	668.5	1331	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .060 FT)	SIREF (R= .060 FT)
96.7	.069	3.0-5	3043	5.492E-05	7.782E-08	2.964E 06	2.865E-02	1.561E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKR)	TRAN(TO)	BETA(TO)
10P(T)	3086					
SIDE(S)	3087	350	89	.0652	3.334E-01	4.0790E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	1595(35A)	45.62	3.43	5.2699E-03	.1669	5.532E-03	.1931	5.672E-03	.1980	2.247E-03
S	3296(35A)	45.62	3.43	5.2699E-03	.1669	5.532E-03	.1931	5.672E-03	.1980	2.247E-03
I	1596(35A)	41.87	4.97	5.155E-03	.1650	5.400E-03	.1906	5.594E-03	.1955	2.218E-03
S	3297(35A)	41.87	4.97	5.155E-03	.1650	5.400E-03	.1906	5.594E-03	.1955	2.218E-03
I	1597(35A)	42.94	4.05	5.101E-03	.1632	5.390E-03	.1882	5.527E-03	.1929	2.190E-03
S	3298(35A)	42.94	4.05	5.101E-03	.1632	5.390E-03	.1882	5.527E-03	.1929	2.190E-03
I	1598(35A)	43.59	4.13	5.051E-03	.1616	5.324E-03	.1858	5.454E-03	.1906	2.163E-03
S	3299(35A)	43.59	4.13	5.051E-03	.1616	5.324E-03	.1858	5.454E-03	.1906	2.163E-03
I	1599(35A)	45.07	4.19	5.001E-03	.1597	5.259E-03	.1836	5.392E-03	.1882	2.136E-03
S	3300(35A)	45.07	4.19	5.001E-03	.1597	5.259E-03	.1836	5.392E-03	.1882	2.136E-03
I	1600(35A)	46.12	4.23	4.955E-03	.1580	5.197E-03	.1814	5.324E-03	.1860	2.111E-03
S	3301(35A)	46.12	4.23	4.955E-03	.1580	5.197E-03	.1814	5.324E-03	.1860	2.111E-03
I	1601(35A)	47.17	4.29	4.909E-03	.1565	5.138E-03	.1794	5.268E-03	.1839	2.087E-03
S	3302(35A)	47.17	4.29	4.909E-03	.1565	5.138E-03	.1794	5.268E-03	.1839	2.087E-03

387

GP 37

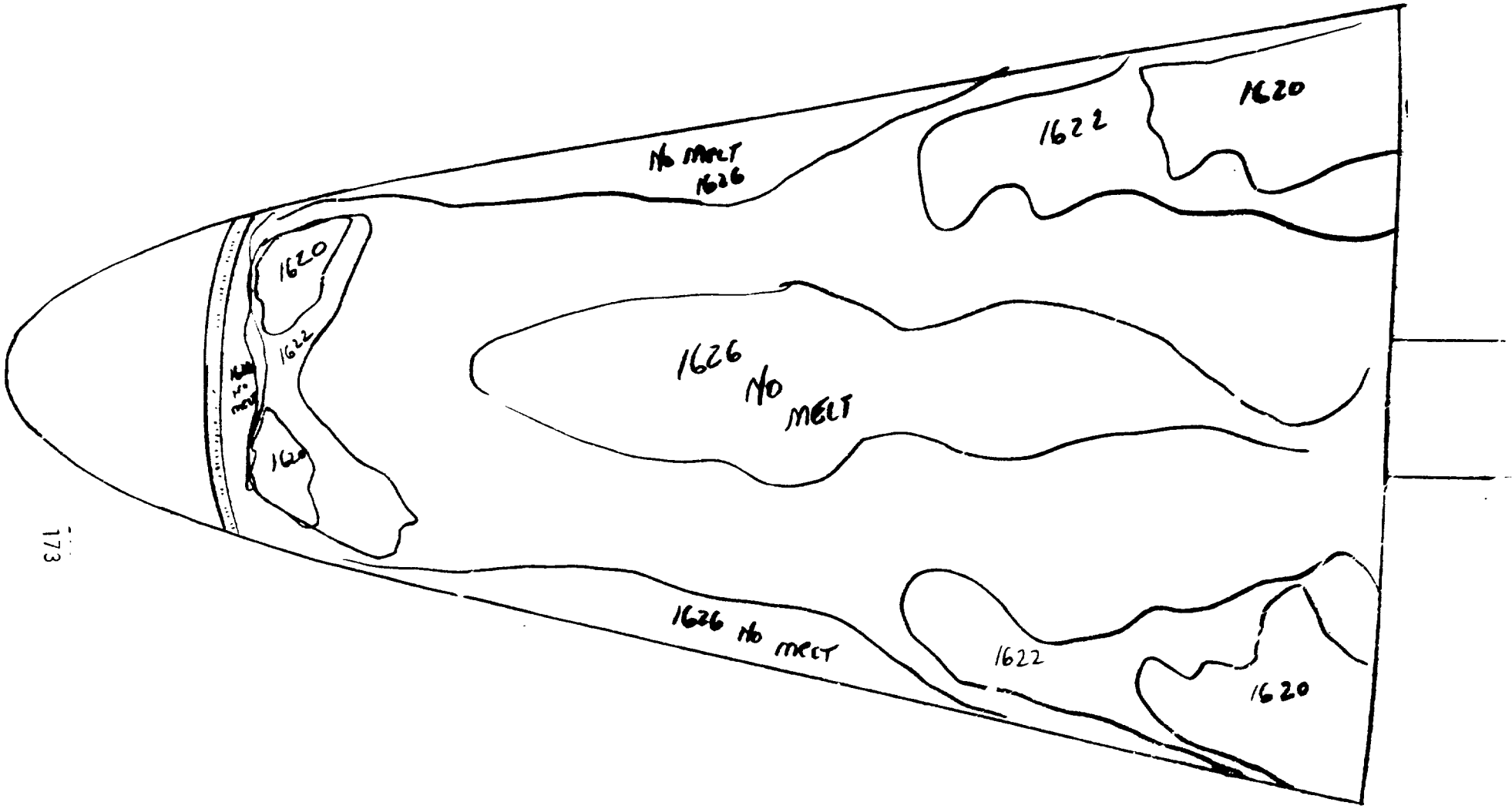
670 PSIA

870°F

TPC = 400°F

α = 30

1607 1ST FR ℄



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V614-B28 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE Z/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
37	11	TRIP				S	.110	.031	1.416E 06	7.734E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	669.6	1363	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	STREF (RE .040 FT)
96.1	.084	3.085	1838	6.335E-05	7.737E-08	2.694E 05	2.964E-02	1.555E-02

CAMERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	TRAN(TO)	BETA(TO)
10P(T)	3CR6					
SIDE(S)	3CR7	400	46	.0660	4.056E-01	5.4282E-01

SG

	PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	160(400)	1.50	MODEL HAS NOT REACHED CENTERLINE						
S	3355(400)	1.50	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 1.62									
I	160(400)	2.57 1.64	2.775E-02	.9704	3.778E-02	1.3192	3.618E-02	1.2626	1.474E-02
S	3356(400)	2.57 1.64	2.775E-02	.9704	3.778E-02	1.3192	3.618E-02	1.2626	1.474E-02
I	160(400)	3.62 2.71	2.175E-02	.7595	2.957E-02	1.0325	2.830E-02	.9882	1.154E-02
S	3357(400)	3.62 2.71	2.175E-02	.7595	2.957E-02	1.0325	2.830E-02	.9882	1.154E-02
SG 3.65									
I	160(400)	4.67 3.74	1.865E-02	.6448	2.510E-02	.8766	2.403E-02	.8390	9.795E-03
S	3358(400)	4.67 3.74	1.865E-02	.6448	2.510E-02	.8766	2.403E-02	.8390	9.795E-03
I	160(400)	5.75 4.84	1.626E-02	.5686	2.214E-02	.7730	2.119E-02	.7399	8.638E-03
S	3359(400)	5.75 4.84	1.626E-02	.5686	2.214E-02	.7730	2.119E-02	.7399	8.638E-03
I	160(400)	6.83 5.92	1.473E-02	.5143	2.002E-02	.6992	1.916E-02	.6692	7.813E-03
S	3360(400)	6.83 5.92	1.473E-02	.5143	2.002E-02	.6992	1.916E-02	.6692	7.813E-03
I	161(400)	7.88 6.97	1.357E-02	.4739	1.845E-02	.6443	1.768E-02	.6167	7.199E-03
S	3361(400)	7.88 6.97	1.357E-02	.4739	1.845E-02	.6443	1.768E-02	.6167	7.199E-03
I	161(400)	8.95 8.04	1.263E-02	.4411	1.717E-02	.5996	1.644E-02	.5739	6.701E-03
S	3362(400)	8.95 8.04	1.263E-02	.4411	1.717E-02	.5996	1.644E-02	.5739	6.701E-03
I	162(400)	10.03 9.12	1.175E-02	.4107	1.613E-02	.5632	1.544E-02	.5390	6.293E-03
S	3363(400)	10.03 9.12	1.175E-02	.4107	1.613E-02	.5632	1.544E-02	.5390	6.293E-03
I	163(400)	11.08 10.17	1.123E-02	.3923	1.527E-02	.5333	1.462E-02	.5104	5.959E-03
S	3364(400)	11.08 10.17	1.123E-02	.3923	1.527E-02	.5333	1.462E-02	.5104	5.959E-03
I	164(400)	12.13 11.22	1.069E-02	.3734	1.454E-02	.5077	1.391E-02	.4859	5.673E-03
S	3365(400)	12.13 11.22	1.069E-02	.3734	1.454E-02	.5077	1.391E-02	.4859	5.673E-03
I	165(400)	13.21 12.30	1.022E-02	.3567	1.389E-02	.4850	1.329E-02	.4642	5.419E-03
S	3366(400)	13.21 12.30	1.022E-02	.3567	1.389E-02	.4850	1.329E-02	.4642	5.419E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
37	11	TRIP				5	.110	.031	1.416E 06	7.734E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PRECHEND	ROLL-MODEL	YAW
7.99	669.4	1323	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .040 FT)	SIREF (IN= .040 FT)
96.1	.044	16.45	3834	1.335E-05	7.737E-08	2.594E 05	2.464E-02	1.555E-02

ALPHA (DEG)	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SUBAPE ROOT (RHOCACAA)	TRAN(TO)	BETA(TO)
SICE(S)	3CPA					
SG	3CPT	400	94	.0650	4.056E-01	5.4282E-01

	PT. NO	TIME	PELLINE	H(0)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	161(400)	14.26	14.35	9.8[illegible]5E-03	.3424	1.333E-02	.4655	1.276E-02	.4455	5.201E-03
2	3367(400)	14.26	14.35	9.8[illegible]5E-03	.3424	1.333E-02	.4655	1.276E-02	.4455	5.201E-03
1	161(400)	15.34	15.43	9.432E-03	.3294	1.282E-02	.4478	1.227E-02	.4286	5.004E-03
2	3368(400)	15.34	15.43	9.432E-03	.3294	1.282E-02	.4478	1.227E-02	.4286	5.004E-03
1	161(400)	16.29	16.48	9.1[illegible]5E-03	.3180	1.238E-02	.4323	1.185E-02	.4138	4.831E-03
2	3369(400)	16.29	16.48	9.1[illegible]5E-03	.3180	1.238E-02	.4323	1.185E-02	.4138	4.831E-03
1	161(400)	17.46	16.55	8.8[illegible]5E-03	.3075	1.197E-02	.4180	1.146E-02	.4001	4.671E-03
2	337 (400)	17.46	16.55	8.8[illegible]5E-03	.3075	1.197E-02	.4180	1.146E-02	.4001	4.671E-03
1	162 (400)	18.52	17.61	8.5[illegible]5E-03	.2982	1.161E-02	.4053	1.111E-02	.3880	4.529E-03
2	3372(400)	18.52	17.61	8.5[illegible]5E-03	.2982	1.161E-02	.4053	1.111E-02	.3880	4.529E-03
1	162(400)	19.57	18.66	8.2[illegible]5E-03	.2896	1.128E-02	.3938	1.079E-02	.3769	4.400E-03
2	3373(400)	19.57	18.66	8.2[illegible]5E-03	.2896	1.128E-02	.3938	1.079E-02	.3769	4.400E-03
1	162(400)	20.64	19.73	8.0[illegible]5E-03	.2814	1.096E-02	.3829	1.049E-02	.3664	4.278E-03
2	3373(400)	20.64	19.73	8.0[illegible]5E-03	.2814	1.096E-02	.3829	1.049E-02	.3664	4.278E-03
1	162(400)	21.69	20.78	7.8[illegible]5E-03	.2744	1.068E-02	.3731	1.023E-02	.3571	4.169E-03
2	3374(400)	21.69	20.78	7.8[illegible]5E-03	.2744	1.068E-02	.3731	1.023E-02	.3571	4.169E-03
1	162(400)	22.77	21.86	7.6[illegible]3E-03	.2674	1.042E-02	.3638	9.970E-03	.3482	4.065E-03
2	3375(400)	22.77	21.86	7.6[illegible]3E-03	.2676	1.042E-02	.3638	9.970E-03	.3482	4.065E-03
2	3376(400)	24.82	22.91	7.4[illegible]5E-03	.2614	1.018E-02	.3553	9.734E-03	.3401	3.970E-03
1	162(400)	23.85	22.94	7.4[illegible]1E-03	.2612	1.017E-02	.3551	9.734E-03	.3399	3.968E-03
1	162(400)	24.90	23.99	7.315E-03	.2554	9.944E-03	.3473	9.518E-03	.3324	3.880E-03
2	3377(400)	24.90	23.99	7.315E-03	.2554	9.944E-03	.3473	9.518E-03	.3324	3.880E-03
		25.37		MODEL HAS LEFT CENTERLINE						
1	162(400)	25.95	25.04	7.1[illegible]5E-03	.2500	9.733E-03	.3399	9.316E-03	.3253	3.798E-03
2	3378(400)	25.95	25.0[illegible]	7.1[illegible]5E-03	.2500	9.733E-03	.3399	9.316E-03	.3253	3.798E-03

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V414-H2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REH	HEU
37	11	TRIP				5	.110	.031	1.416E 06	7.734E 03

MACH NO	PO(PSIA)	T(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.39	469.4	1323	29.98	.02	30.00	.0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
96.1	.065	3.045	3838	5.335E-05	7.737E-08	2.994E 06	2.864E-02	1.555E-02

CAPPEA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
(OH(T)	3084					
SIIF(S)	3087	.00	86	.0660	4.056E-01	5.4282E-01
SG						

	PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.9TC)	H(.9TC)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1424(600)	27.03	24.12	7.011E-03	.2448	9.531E-03	.3328	9.122E-03	.3185	3.719E-03
5	3274(600)	27.03	24.12	7.011E-03	.2448	9.571E-03	.3328	9.122E-03	.3185	3.719E-03
1	1425(600)	28.08	27.17	6.876E-03	.2400	9.344E-03	.3263	8.944E-03	.3123	3.646E-03
5	3285(600)	28.08	27.17	6.876E-03	.2400	9.344E-03	.3263	8.944E-03	.3123	3.646E-03
1	1431(600)	29.13	28.22	6.746E-03	.2355	9.169E-03	.3202	8.776E-03	.3064	3.578E-03
5	2241(600)	29.13	28.22	6.746E-03	.2355	9.169E-03	.3202	8.776E-03	.3064	3.578E-03
1	1431(600)	30.18	29.27	6.622E-03	.2312	9.003E-03	.3144	8.616E-03	.3009	3.513E-03
5	3[illegible]2(600)	30.18	29.27	6.622E-03	.2312	9.003E-03	.3144	8.616E-03	.3009	3.513E-03
1	1432(600)	31.26	30.36	6.516E-03	.2271	8.841E-03	.3087	8.462E-03	.2955	3.450E-03
5	3283(600)	31.26	30.36	6.516E-03	.2271	8.841E-03	.3087	8.462E-03	.2955	3.450E-03

#41H-B28

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REG
37	11	10.0				5	.110	.131	1.416E 06	7.136E 06

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	TAW
7.96	669.4	1323	29.98	.02	30.00	0	0

T-INF (DEG R)	M-INF	U-INF (FT/SEC)	V-INF (SLUGS/FT3)	RHO-INF (LB-SEC/FT2)	MU-INF (FT-1)	RE/FT	HREF (IN .040 FT)	SREF (IN .040 FT)
96.1	.044	3.045	3834	4.435E-05	7.737E-08	2.994E 04	2.[illegible] 02	1.555E-02

ALPHA (DEG R)	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SUBREF NO	(MACAM)	TRAN(TO)	BETA(TO)
SILE(S)	3GP4						
96	3GP7	400	96	.0660		4.850E-01	5.4282E-0.

	PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	1[illegible](400)	1[illegible].26	13.35	9.8[illegible]E-03	.4424	1.333E-02	.4455	1.276E-02	.4459	5.281E-03
S	336(400)	1[illegible].26	13.35	9.8[illegible]E-03	.4424	1.333E-02	.4455	1.276E-02	.4459	5.281E-03
I	1[illegible]7(400)	1[illegible].34	14.43	9.632E-03	.4296	1.292E-02	.4278	1.227E-02	.4286	5.084E-03
S	33[illegible](400)	1[illegible].34	14.43	9.632E-03	.4296	1.292E-02	.4278	1.227E-02	.4286	5.084E-03
I	141(400)	1[illegible].29	15.68	9.1[illegible]E-03	.4140	1.238E-02	.4323	1.185E-02	.4138	4.831E-03
S	339(400)	[illegible].29	15.68	9.1[illegible]E-03	.4140	1.238E-02	.4323	1.185E-02	.4138	4.831E-03
I	141(400)	17.46	16.58	8.[illegible]E-03	.3675	1.197E-02	.4140	1.140E-02	.4001	4.671E-03
	337 (400)	17.46	16.58	8.[illegible]E-03	.3675	1.197E-02	.4140	1.140E-02	.4001	4.671E-03
I	142 (400)	19.52	17.61	8.5[illegible]E-03	.2982	1.181E-02	.4053	1.111E-02	.3880	4.529E-03
S	337(400)	19.52	17.61	8.5[illegible]E-03	.2982	1.181E-02	.4053	1.111E-02	.3880	4.529E-03
I	142(400)	19.57	18.66	8.2[illegible]E-03	.2896	1.128E-02	.3938	1.074E-02	.3769	4.400E-03
	142(400)	20.64	19.73	8.0[illegible]E-03	.2816	1.096E-02	.3829	1.044E-02	.3664	4.278E-03
S	337(400)	20.64	19.73	8.0[illegible]E-03	.2816	1.096E-02	.3829	1.044E-02	.3664	4.278E-03
I	142(400)	21.69	20.78	7.8[illegible]E-03	.2744	1.068E-02	.3731	1.023E-02	.3571	4.169E-03
S	337(400)	21.69	20.78	7.8[illegible]E-03	.2744	1.068E-02	.3731	1.023E-02	.3571	4.169E-03
I	142(400)	22.77	21.86	7.6[illegible]E-03	.2676	1.042E-02	.3638	9.970E-03	.3482	4.065E-03
S	337(400)	22.77	21.86	7.6[illegible]E-03	.2676	1.042E-02	.3638	9.970E-03	.3482	4.065E-03
S	337(400)	23.82	22.91	7.4[illegible]E-03	.2616	1.019E-02	.3553	9.734E-03	.3401	3.970E-03
I	142(400)	23.85	22.94	7.4[illegible]E-03	.2612	1.017E-02	.3551	9.734E-03	.3399	3.968E-03
I	142(400)	24.90	23.99	7.3[illegible]E-03	.2554	9.944E-03	.3473	9.518E-03	.3324	3.880E-03
S	337(400)	24.90	23.99	7.3[illegible]E-03	.2554	9.944E-03	.3473	9.518E-03	.3324	3.880E-03
		25.37		MODEL HAS LEFT CENTERLINE						
I	142(400)	25.95	25.04	7.1[illegible]E-03	.2500	9.733E-03	.3399	9.316E-03	.3253	3.798E-03
S	337(400)	25.95	25.04	7.1[illegible]E-03	.2500	9.733E-03	.3399	9.316E-03	.3253	3.798E-03

V41H-R2A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
37	39	TRIP				5	.110	.031	1.416E 06	7.736E 03

MACH N	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.99	469.4	1323	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUG/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (IN .060 FT)	STREF (IN .060 FT)
96.1	.0[illegible]	3.0[illegible]5	3838	5.[illegible]35E-05	7.[illegible]17E-04	2.594E 06	2.864E-02	1.555E-02

LAMBDA (DEG)	ROLL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAPA)	TRAN(TO)	RETA(TO)
SICE(S)	3LP4 3LPT	600	86	.0660	4.056E-01	5.4282E-01

X6

	PIC NO	TIME	FLTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	1A2H(400)	27.13	27.12	7.011E-03	.2464	9.531E-03	.3328	9.122E-03	.3185	3.719E-03
2	1A2H(400)	27.13	27.12	7.011E-03	.2464	9.531E-03	.3328	9.122E-03	.3185	3.719E-03
1	1A2H(400)	28.18	27.17	6.874E-03	.2400	9.344E-03	.3263	8.944E-03	.3123	3.646E-03
2	3H(400)	28.18	27.17	6.874E-03	.2400	9.344E-03	.3263	8.944E-03	.3123	3.646E-03
1	1A3 (400)	28.23	27.22	6.744E-03	.2355	9.184E-03	.3202	8.776E-03	.3064	3.578E-03
2	3H1(400)	28.23	27.22	6.744E-03	.2355	9.184E-03	.3202	8.776E-03	.3064	3.578E-03
1	1A4(400)	28.28	27.27	6.622E-03	.2312	9.003E-03	.3144	8.618E-03	.3009	3.513E-03
2	3H2(400)	28.28	27.27	6.622E-03	.2312	9.003E-03	.3144	8.618E-03	.3009	3.513E-03
1	1A5(400)	31.68	31.35	6.534E-03	.2271	8.841E-03	.3087	8.462E-03	.2955	3.450E-03
2	3H3(400)	31.68	31.35	6.534E-03	.2271	8.841E-03	.3087	8.462E-03	.2955	3.450E-03

587

Gp 38

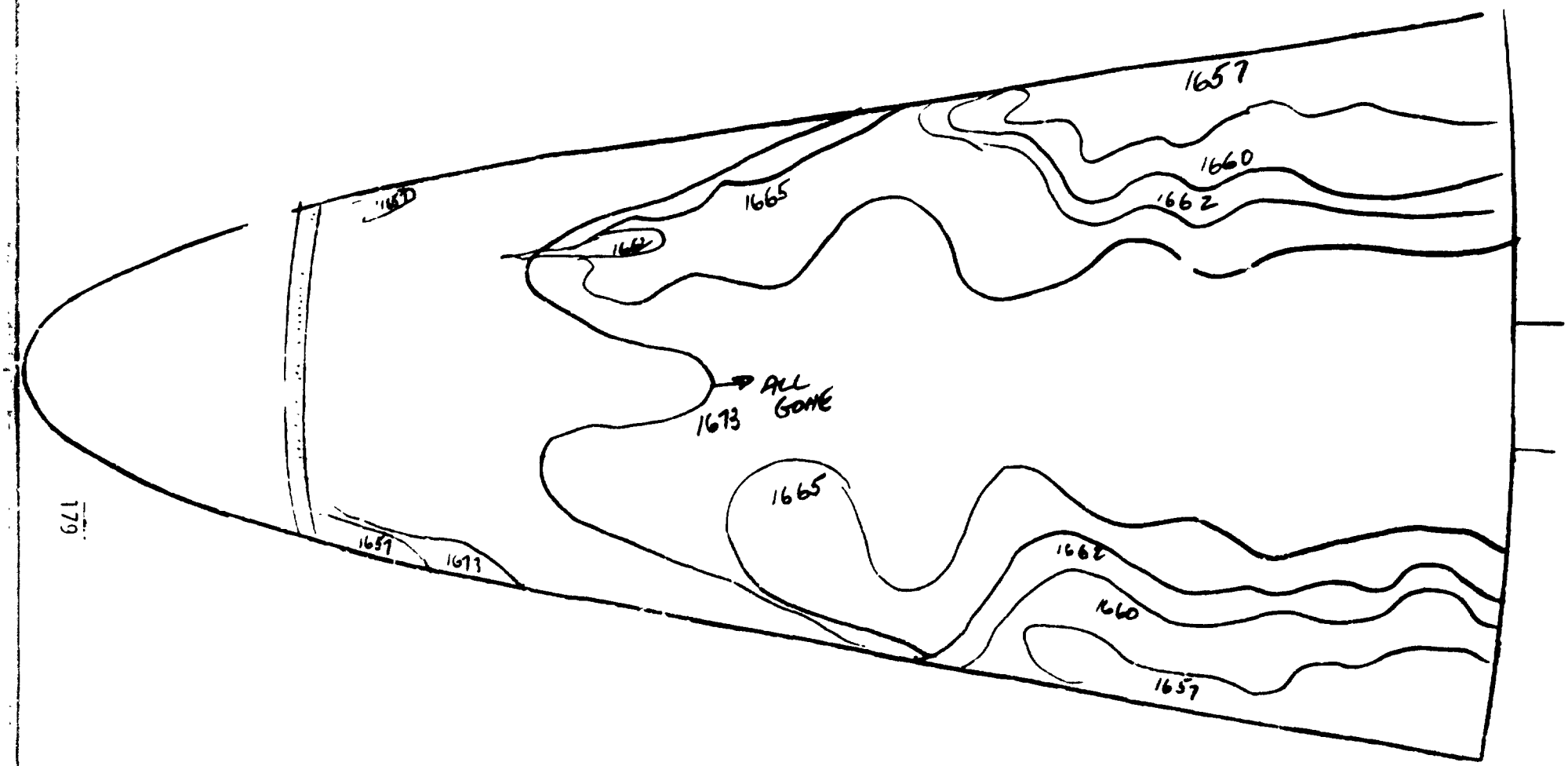
610 PSIA

865°F

T_{AC} = 350°F

α = 20

1638 1ST FR ℄



V41H-828

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
34	11	TRIP				S	.110	.031	1.293E 06	7.063E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	409.5	1320	19.98	10.32	30.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUG-S/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RH= .040 FT)	STREF (RH= .040 FT)
96.6	.003	2.813	3834	5.506E-05	7.721E-08	2.734E 06	2.732E-02	1.627E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUACAR)	TRAP(TO)	STA(TO)
(DEG)	3CP6					
SIDE(S)	3CP7	350	96	.0052	9.509E-01	4.200E-01
36						

	PTC NO	TIME RELATIVE	H(TO)	H(TO)/HREF	H(.9)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	1435(350)	1.50	MODEL HAS NOT REACHED CENTERLINE						
5	3346(350)	1.50	MODEL HAS NOT REACHED CENTERLINE						
INSPECT TIME =		1.00							
1	1436(350)	2.57 1.68	2.118E-02	.7745	2.790E-02	1.0214	2.862E-02	1.0477	1.235E-02
5	3347(350)	2.57 1.68	2.118E-02	.7745	2.790E-02	1.0214	2.862E-02	1.0477	1.235E-02
1	1437(350)	3.02 2.73	1.653E-02	.6071	2.187E-02	.8007	2.246E-02	.8213	9.680E-03
5	3348(350)	3.02 2.73	1.653E-02	.6071	2.187E-02	.8007	2.246E-02	.8213	9.680E-03
36		3.93							
1	1438(350)	4.70 3.93	1.341E-02	.5141	1.852E-02	.6741	1.900E-02	.6955	8.197E-03
5	3349(350)	4.70 3.93	1.341E-02	.5141	1.852E-02	.6741	1.900E-02	.6955	8.197E-03
1	1439(350)	5.48 4.98	1.239E-02	.4539	1.635E-02	.5986	1.677E-02	.6140	7.236E-03
5	3350(350)	5.48 4.98	1.239E-02	.4539	1.635E-02	.5986	1.677E-02	.6140	7.236E-03
1	1440(350)	6.03 5.93	1.125E-02	.4117	1.483E-02	.5430	1.521E-02	.5570	6.564E-03
5	3351(350)	6.03 5.93	1.125E-02	.4117	1.483E-02	.5430	1.521E-02	.5570	6.564E-03
1	1441(350)	7.08 6.98	1.037E-02	.3795	1.367E-02	.5005	1.402E-02	.5133	6.050E-03
5	3352(350)	7.08 6.98	1.037E-02	.3795	1.367E-02	.5005	1.402E-02	.5133	6.050E-03
1	1442(350)	8.58 8.08	9.663E-03	.3537	1.273E-02	.4658	1.305E-02	.4778	5.631E-03
5	3353(350)	8.58 8.08	9.663E-03	.3532	1.273E-02	.4658	1.305E-02	.4778	5.631E-03
1	1443(350)	10.03 9.13	9.025E-03	.3318	1.195E-02	.4375	1.226E-02	.4488	5.289E-03
5	3354(350)	10.03 9.13	9.025E-03	.3318	1.195E-02	.4375	1.226E-02	.4488	5.289E-03
1	1444(350)	11.08 10.19	8.525E-03	.3142	1.132E-02	.4143	1.161E-02	.4250	5.009E-03
5	3355(350)	11.08 10.19	8.525E-03	.3142	1.132E-02	.4143	1.161E-02	.4250	5.009E-03
1	1445(350)	12.03 11.24	8.171E-03	.2991	1.078E-02	.3945	1.105E-02	.4046	4.769E-03
5	3356(350)	12.03 11.24	8.171E-03	.2991	1.078E-02	.3945	1.105E-02	.4046	4.769E-03
1	1446(350)	13.01 12.31	7.845E-03	.2857	1.029E-02	.3769	1.056E-02	.3865	4.556E-03
5	3357(350)	13.01 12.31	7.845E-03	.2857	1.029E-02	.3769	1.056E-02	.3865	4.556E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
39	11	TRIP				5	.110	.031	1.293E 06	7.063E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREREND	ROLL-MODEL	YAW
7.99	409.5	1320	19.98	10.02	33.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH= .040 FT)	STREF (RH= .040 FT)
95.5	.053	2.813	3836	5.508E-05	7.721E-08	2.734E 06	2.732E-02	1.627E-02

CAMERA (DEG)	MODEL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUNDING ROOT (NMCACAN)	TRAN(TO)	RETA(TO)
0	3C86					
31E(S)	3L87	150	RE	.0652	3.409E-01	4.2008E-01
3G						

	PIC NO	TIME	ELECTIVE	H(TO)	H(TO)/HREF	H(.4TO)	H(.3TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	1667(35)	14.26	13.36	7.492E-03	.2743	9.881E-03	.3617	1.014E-02	.3710	4.373E-03
3	1668(35)	14.26	13.36	7.492E-03	.2743	9.881E-03	.3617	1.014E-02	.3710	4.373E-03
1	1669(35)	15.24	14.44	7.2[illegible]E-03	.2639	9.505E-03	.3480	9.750E-03	.3569	4.207E-03
3	1670(35)	15.24	14.44	7.2[illegible]E-03	.2639	9.505E-03	.3480	9.750E-03	.3569	4.207E-03
1	1671(35)	16.23	15.43	6.9[illegible]E-03	.2547	9.174E-03	.3360	9.414E-03	.3446	4.061E-03
3	1672(35)	16.23	15.43	6.9[illegible]E-03	.2547	9.174E-03	.3360	9.414E-03	.3446	4.061E-03
1	1673(35)	17.06	16.57	6.7[illegible]E-03	.2463	8.875E-03	.3249	9.103E-03	.3332	3.927E-03
3	1674(35)	17.06	16.57	6.7[illegible]E-03	.2463	8.875E-03	.3249	9.103E-03	.3332	3.927E-03
1	1675(35)	18.02	17.62	6.5[illegible]E-03	.2389	8.606E-03	.3150	8.827E-03	.3231	3.808E-03
3	1676(35)	18.02	17.62	6.5[illegible]E-03	.2389	8.606E-03	.3150	8.827E-03	.3231	3.808E-03
1	1677(35)	19.57	19.07	6.3[illegible]E-03	.2321	8.369E-03	.3060	8.575E-03	.3139	3.700E-03
3	1678(35)	19.57	19.07	6.3[illegible]E-03	.2319	8.354E-03	.3058	8.569E-03	.3137	3.697E-03
1	1679(35)	20.64	19.75	6.1[illegible]E-03	.2256	8.124E-03	.2976	8.335E-03	.3052	3.597E-03
3	1680(35)	20.64	19.75	6.1[illegible]E-03	.2256	8.124E-03	.2976	8.336E-03	.3052	3.597E-03
1	1681(35)	21.69	20.80	6.0[illegible]E-03	.2199	7.921E-03	.2900	8.125E-03	.2974	3.505E-03
3	1682(35)	21.69	20.80	6.0[illegible]E-03	.2199	7.921E-03	.2900	8.125E-03	.2974	3.505E-03
1	1683(35)	22.75	21.85	5.8[illegible]E-03	.2145	7.724E-03	.2829	7.927E-03	.2902	3.420E-03
3	1684(35)	22.75	21.85	5.8[illegible]E-03	.2145	7.724E-03	.2829	7.927E-03	.2902	3.420E-03
1	1685(35)	23.82	22.91	5.7[illegible]E-03	.2096	7.544E-03	.2762	7.734E-03	.2833	3.339E-03
3	1686(35)	23.82	22.91	5.7[illegible]E-03	.2094	7.544E-03	.2762	7.734E-03	.2833	3.339E-03
1	1687(35)	24.87	23.96	5.5[illegible]E-03	.2049	7.377E-03	.2701	7.567E-03	.2770	3.265E-03
3	1688(35)	24.87	23.96	5.5[illegible]E-03	.2049	7.377E-03	.2701	7.567E-03	.2770	3.265E-03
1	1689(35)	25.[illegible]	25.05	5.4[illegible]E-03	.2003	7.217E-03	.2642	7.403E-03	.2710	3.194E-03
3	1690(35)	25.05	25.05	5.4[illegible]E-03	.2003	7.217E-03	.2642	7.403E-03	.2710	3.194E-03
3	1691(35)	27.10	26.17	5.3[illegible]E-03	.1962	7.070E-03	.2588	7.252E-03	.2655	3.129E-03

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REB	REO
3A	11	1210				S	.110	.031	1.293E 06	7.063E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	409.5	1320	30.08	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (IN= .040 FT)	SREF (IN= .040 FT)
99.5	.093	2.813	3830	5.506E-05	7.721E-08	2.736E 06	2.732E-02	1.627E-02

CAMERA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (NMCACAK)	TRAN(TO)	HETA(TO)
(DF(1))	3C86					
DIC(S)	3C87	350	68	.3652	3.409E-01	4.208NE-01
SG						

	PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	165(350)	27.03	26.13	5.3[illegible]E-03	.1392	7.047E-03	.2587	7.264E-03	.2656	3.127E-03
1	160(350)	28.08	27.18	5.2[illegible]E-03	.1923	6.924E-03	.2537	7.107E-03	.2602	3.066E-03
3	161(350)	28.08	27.18	5.2[illegible]E-03	.1923	6.929E-03	.2537	7.107E-03	.2602	3.066E-03
1	166(350)	29.13	28.23	5.155E-03	.1887	6.749E-03	.2489	6.973E-03	.2553	3.009E-03
3	162(350)	29.13	28.23	5.155E-03	.1887	6.749E-03	.2489	6.973E-03	.2553	3.009E-03
1	167(350)	30.20	29.31	5.0[illegible]E-03	.1852	6.673E-03	.2463	6.844E-03	.2506	2.953E-03
3	163(350)	30.20	29.31	5.0[illegible]E-03	.1852	6.673E-03	.2463	6.844E-03	.2506	2.953E-03
1	168(350)	31.26	30.36	4.971E-03	.1820	6.556E-03	.2420	6.725E-03	.2462	2.901E-03
3	164(350)	31.26	30.36	4.971E-03	.1820	6.556E-03	.2420	6.725E-03	.2462	2.901E-03
1	169(350)	32.33	31.44	4.8[illegible]E-03	.1788	6.443E-03	.2379	6.607E-03	.2419	2.851E-03
3	165(350)	32.33	31.44	4.8[illegible]E-03	.1788	6.443E-03	.2379	6.607E-03	.2419	2.851E-03
1	170(350)	33.38	32.49	4.8[illegible]E-03	.1759	6.338E-03	.2320	6.501E-03	.2380	2.805E-03
3	166(350)	33.38	32.49	4.8[illegible]E-03	.1759	6.338E-03	.2320	6.501E-03	.2380	2.805E-03
1	166(350)	34.46	33.56	4.7[illegible]E-03	.1731	6.235E-03	.2283	6.396E-03	.2341	2.759E-03
3	167(350)	34.46	33.56	4.7[illegible]E-03	.1731	6.235E-03	.2283	6.396E-03	.2341	2.759E-03
1	167(350)	35.51	34.61	4.6[illegible]E-03	.1704	6.140E-03	.2249	6.298E-03	.2306	2.717E-03
3	168(350)	35.51	34.61	4.6[illegible]E-03	.1704	6.140E-03	.2248	6.298E-03	.2306	2.717E-03
1	168(350)	36.59	35.69	4.5[illegible]E-03	.1678	6.047E-03	.2214	6.202E-03	.2270	2.676E-03
3	169(350)	36.59	35.69	4.5[illegible]E-03	.1678	6.047E-03	.2214	6.202E-03	.2270	2.676E-03
1	169(350)	37.64	36.74	4.5[illegible]E-03	.1656	5.959E-03	.2182	6.113E-03	.2238	2.637E-03
3	170(350)	37.64	36.74	4.5[illegible]E-03	.1656	5.959E-03	.2182	6.113E-03	.2238	2.637E-03
1	170(350)	38.69	37.79	4.4[illegible]E-03	.1631	5.876E-03	.2151	6.027E-03	.2206	2.600E-03
3	171(350)	38.69	37.79	4.4[illegible]E-03	.1631	5.876E-03	.2151	6.027E-03	.2206	2.600E-03
1	171(350)	39.76	38.87	4.3[illegible]E-03	.1608	5.796E-03	.2121	5.943E-03	.2176	2.564E-03
3	172(350)	39.76	38.87	4.3[illegible]E-03	.1608	5.796E-03	.2121	5.943E-03	.2176	2.564E-03

NASA-HI OH 56

V41H-824

AEDC(ARO,INC.) ARNOLD AFS,TENNES
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

10- 8-74 PAGE 4

UNCOP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	MED
30	11	TRIP				5	.110	.031	1.293E 06	7.063E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREGEND	ROLL-MODEL	YAW
7.99	409.5	1320	19.98	19.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (XR= .040 FT)	SREF (SR= .060 FT)
96.9	.053	2.812	3836	5.538E-05	7.721E-08	2.736E 06	2.732E-02	1.627E-02

LAMBDA (DEG)	MODEL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAR)	TRAN(TO)	BETA(TO)
SILF(S)	3CR4					
36	3CRT	350	86	.0652	3.404E-01	4.200BE-01

	PIC NO	TIME (SECS)		H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	1472(350)	41.52	3[illegible]	4.3[illegible]	.1587	5.717E-03	.2063	5.866E-03	.2147	2.530E-03
3	3423(350)	41.22	3[illegible]	4.3[illegible]	.1587	5.717E-03	.2063	5.866E-03	.2147	2.530E-03
1	1473(350)	41.59	41.0[illegible]	4.27[illegible]	.1566	5.642E-03	.2065	5.787E-03	.2118	2.497E-03
3	3424(350)	41.09	41.0[illegible]	4.27[illegible]	.1566	5.642E-03	.2065	5.787E-03	.2118	2.497E-03
1	1474(350)	42.06	42.05	4.22[illegible]	.1566	5.571E-03	.2039	5.716E-03	.2092	2.465E-03
3	3425(350)	42.06	42.05	4.22[illegible]	.1566	5.571E-03	.2039	5.716E-03	.2092	2.465E-03
1	1475(350)	44.12	44.12	4.171E-03	.1527	5.501E-03	.2014	5.642E-03	.2066	2.434E-03
3	3426(350)	44.12	44.12	4.171E-03	.1527	5.501E-03	.2014	5.642E-03	.2066	2.434E-03
1	1476(350)	44.17	44.15	4.121E-03	.1509	.356E-03	.1990	5.575E-03	.2041	2.405E-03
3	3427(350)	44.17	44.18	4.121E-03	[illegible]	5.435E-03	.1990	5.575E-03	.2041	2.405E-03
1	1477(350)	45.12	45.23	4.073E-03	.1491	5.371E-03	.1966	5.510E-03	.2017	2.377E-03
3	3428(350)	45.12	45.23	4.073E-03	.1491	5.371E-03	.1966	5.510E-03	.2017	2.377E-03
1	1478(350)	47.20	46.36	4.025E-03	.1474	5.308E-03	.1943	5.445E-03	.1993	2.349E-03
3	3429(350)	47.20	46.36	4.025E-03	.1474	5.308E-03	.1943	5.445E-03	.1993	2.349E-03
1	1479(350)	49.25	47.35	3.9[illegible]0E-03	.1457	5.249E-03	.1922	5.386E-03	.1971	2.323E-03
3	3430(350)	49.25	47.35	3.9[illegible]0E-03	.1457	5.249E-03	.1922	5.386E-03	.1971	2.323E-03
		49.63		MODEL WAS LEFT CENTERLINE						
1	1480(350)	49.50	49.61	3.937E-03	.1441	5.192E-03	.1901	5.326E-03	.1950	2.298E-03
3	3431(350)	49.50	49.61	3.937E-03	.1441	5.192E-03	.1901	5.326E-03	.1950	2.298E-03
1	1481(350)	50.78	49.84	3.846E-03	.1425	5.135E-03	.1880	5.267E-03	.1928	2.273E-03
3	3432(350)	50.78	49.84	3.846E-03	.1425	5.135E-03	.1880	5.267E-03	.1928	2.273E-03
1	1482(350)	51.63	50.53	3.853E-03	.1411	5.082E-03	.1860	5.212E-03	.1908	2.249E-03
3	3433(350)	51.63	50.53	3.853E-03	.1411	5.082E-03	.1860	5.212E-03	.1908	2.249E-03
1	1483(350)	52.68	51.58	3.816E-03	.1396	5.030E-03	.1841	5.159E-03	.1889	2.226E-03
3	3434(350)	52.68	51.58	3.816E-03	.1396	5.030E-03	.1841	5.159E-03	.1889	2.226E-03

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

V619-H28

UNCUS	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
30	11	TRIP				5	.110	.075	1.293E 06	7.063E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.99	489.5	1320	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SREF (RE .040 FT)
95.6	.003	2.812	3834	5.506E-05	7.721E-08	2.734E 06	2.732E-02	1.627E-02

LAMPHA (DEG)	MOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
SILF(S)	3C#4					
36	3C87	450	RE	.0652	3.40VE-01	4.200HE-01

	PIC NO	TIME	DELTIME	P(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	1E46(35*)	53.56	53.66	3.77HE-03	.1382	4.97HE-03	.1822	5.106E-03	.1869	2.203E-03
2	3E3E(35*)	53.56	53.66	3.77HE-03	.1382	4.97HE-03	.1822	5.106E-03	.1869	2.203E-03
1	1E45(35*)	54.61	53.71	3.737E-03	.1368	4.929E-03	.1806	5.056E-03	.1851	2.181E-03
2	3E3A(35*)	54.61	53.71	3.737E-03	.1368	4.929E-03	.1806	5.056E-03	.1851	2.181E-03

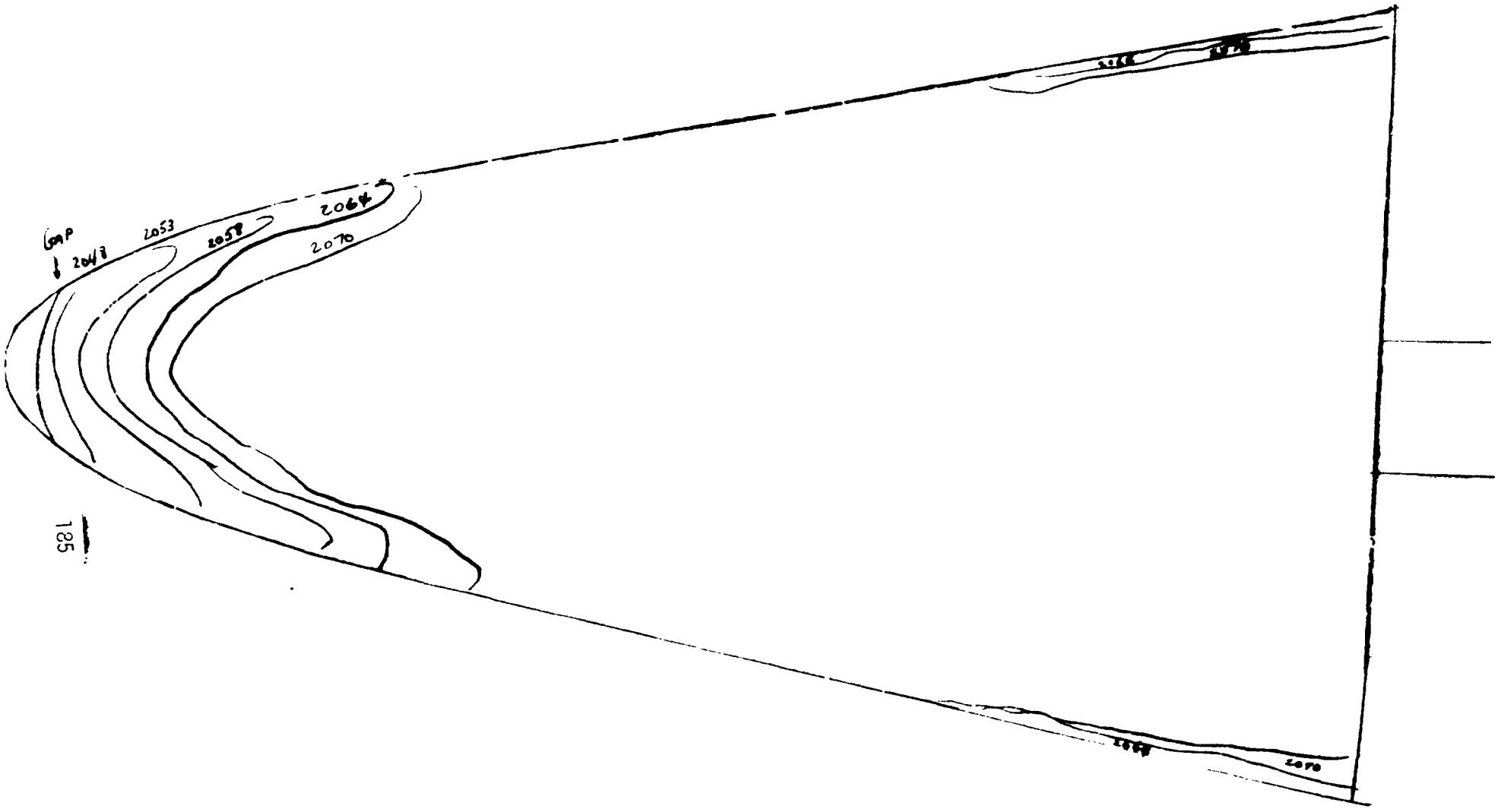
1538
GP 39

$\alpha = 30$

2043 1st Fin ℄

320 PSIA
830°F

$T_{PC} = 250°F$



NASA-RI OF S6 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 7-74 PAGE 1

V41H-024 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEA	HED
39	B	HCC-HRSI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	319.5	1261	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
93.7	.036	1.445	3776	3.027E-05	7.545E-08	1.515E 06	1.984E-02	2.188E-02

LAMFRA	WALL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACAN)	TRAN(TO)	META(TO)
TOP(T)	1538					
SIDE(S)	1603	250	82	.0581	2.273E-01	2.4682E-01
S6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2038(250)	.68		MODEL HAS NOT REACHED CENTERLINE						
S	3699(250)	.68		MODEL HAS NOT REACHED CENTERLINE						
I	2041(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	3700(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
I	2042(250)	2.60	1.69	1.046E-02	.5273	1.331E-02	.6709	1.287E-02	.6489	1.137E-02
S	3701(250)	2.60	1.69	1.046E-02	.5273	1.331E-02	.6709	1.287E-02	.6489	1.137E-02
I	2043(250)	3.68	2.77	8.177E-03	.4122	1.040E-02	.5243	1.006E-02	.5071	8.883E-03
S	3702(250)	3.68	2.77	8.177E-03	.4122	1.040E-02	.5243	1.006E-02	.5071	8.883E-03
S6		3.93								
I	2044(250)	4.78	3.87	6.916E-03	.3486	8.798E-03	.4436	8.509E-03	.4288	7.513E-03
S	3703(250)	4.78	3.87	6.916E-03	.3486	8.798E-03	.4436	8.509E-03	.4288	7.513E-03
I	2045(250)	5.86	4.94	6.117E-03	.3083	7.782E-03	.3922	7.526E-03	.3793	6.645E-03
S	3704(250)	5.86	4.94	6.117E-03	.3083	7.782E-03	.3922	7.526E-03	.3793	6.645E-03
I	2046(250)	6.93	6.02	5.543E-03	.2794	7.052E-03	.3554	6.820E-03	.3438	6.021E-03
S	3705(250)	6.93	6.02	5.543E-03	.2794	7.052E-03	.3554	6.820E-03	.3438	6.021E-03
I	2047(250)	8.01	7.10	5.105E-03	.2573	6.495E-03	.3274	6.282E-03	.3166	5.546E-03
S	3706(250)	8.01	7.10	5.105E-03	.2573	6.495E-03	.3274	6.282E-03	.3166	5.546E-03
I	2048(250)	9.09	8.17	4.757E-03	.2398	6.052E-03	.3050	5.854E-03	.2950	5.168E-03
S	3707(250)	9.09	8.17	4.757E-03	.2398	6.052E-03	.3050	5.854E-03	.2950	5.168E-03
I	2049(250)	10.16	9.25	4.472E-03	.2254	5.684E-03	.2867	5.503E-03	.2773	4.858E-03
S	3708(250)	10.16	9.25	4.472E-03	.2254	5.684E-03	.2867	5.503E-03	.2773	4.858E-03
S	3709(250)	11.24	10.32	4.232E-03	.2133	5.344E-03	.2714	5.208E-03	.2625	4.598E-03
I	2050(250)	11.26	10.35	4.227E-03	.2131	5.378E-0	.2711	5.202E-03	.2622	4.592E-03
I	2051(250)	12.31	11.40	4.028E-03	.2030	5.124E-03	.2593	4.956E-03	.2498	4.375E-03
S	3710(250)	12.31	11.40	4.028E-03	.2030	5.124E-03	.2593	4.956E-03	.2498	4.375E-03

RRCOP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
39	P	RCC-RHSI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	319.5	1281	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	STREF (RE .040 FT)
93.7	.036	1.695	3776	3.027E-05	7.565E-08	1.515E 06	1.986E-02	2.188E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAR)	TRAN(TO)	BETA(TO)
10F(T)	153R					
51CF(S)	193	250	82	.0551	2.273E-01	2.4602E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2052(250)	13.29	12.49	3.650E-03	.1941	4.498E-03	.2469	4.737E-03	.2398	4.182E-03
S	3711(250)	13.29	12.49	3.650E-03	.1941	4.498E-03	.2469	4.737E-03	.2398	4.182E-03
I	2053(250)	14.49	13.54	3.041E-03	.1809	4.095E-03	.2347	4.541E-03	.2249	4.009E-03
S	3712(250)	14.49	13.54	3.041E-03	.1809	4.095E-03	.2347	4.541E-03	.2249	4.009E-03
I	2054(250)	15.54	14.63	3.536E-03	.1792	4.523E-03	.2280	4.376E-03	.2205	3.862E-03
S	3713(250)	15.54	14.63	3.536E-03	.1792	4.523E-03	.2280	4.376E-03	.2205	3.862E-03
I	2055(250)	16.64	15.73	3.429E-03	.1728	4.362E-03	.2199	4.214E-03	.2127	3.725E-03
S	3714(250)	16.64	15.73	3.429E-03	.1728	4.362E-03	.2199	4.214E-03	.2127	3.725E-03
I	2056(250)	17.72	16.81	3.317E-03	.1672	4.220E-03	.2127	4.082E-03	.2057	3.604E-03
S	3715(250)	17.72	16.81	3.317E-03	.1672	4.220E-03	.2127	4.082E-03	.2057	3.604E-03
I	2057(250)	18.80	17.88	3.216E-03	.1621	4.041E-03	.2042	3.957E-03	.1996	3.493E-03
	3716(250)	18.80	17.88	3.216E-03	.1621	4.041E-03	.2042	3.957E-03	.1996	3.493E-03
I	2058(250)	19.87	18.96	3.123E-03	.1574	3.973E-03	.2003	3.843E-03	.1937	3.393E-03
S	3717(250)	19.87	18.96	3.123E-03	.1574	3.973E-03	.2003	3.843E-03	.1937	3.393E-03
I	2059(250)	20.95	20.04	3.038E-03	.1531	3.865E-03	.1948	3.738E-03	.1884	3.300E-03
S	3718(250)	20.95	20.04	3.038E-03	.1531	3.865E-03	.1948	3.738E-03	.1884	3.300E-03
I	2060(250)	22.05	21.14	2.958E-03	.1491	3.763E-03	.1897	3.640E-03	.1835	3.213E-03
S	3719(250)	22.05	21.14	2.958E-03	.1491	3.763E-03	.1897	3.640E-03	.1835	3.213E-03
I	2061(250)	23.10	22.19	2.887E-03	.1455	3.673E-03	.1851	3.552E-03	.1791	3.136E-03
S	3720(250)	23.10	22.19	2.887E-03	.1455	3.673E-03	.1851	3.552E-03	.1791	3.136E-03
I	2062(250)	24.20	23.29	2.818E-03	.1420	3.585E-03	.1807	3.467E-03	.1748	3.061E-03
S	3721(250)	24.20	23.29	2.818E-03	.1420	3.585E-03	.1807	3.467E-03	.1748	3.061E-03
I	2063(250)	25.28	24.37	2.755E-03	.1389	3.505E-03	.1767	3.390E-03	.1709	2.993E-03
S	3722(250)	25.28	24.37	2.755E-03	.1389	3.505E-03	.1767	3.390E-03	.1709	2.993E-03
I	2[illegible](250)	26.36	25.44	2.695E-03	.1359	3.430E-03	.1729	3.318E-03	.1672	2.929E-03
S	3[illegible](250)	26.36	25.44	2.695E-03	.1359	3.430E-03	.1729	3.318E-03	.1672	2.929E-03

WHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	NEU
39	8	HCL-HHSI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENT	ROLL-MODEL	YAW
7.96	919.5	1281	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
93.7	.036	1.495	3770	1.027E-05	7.565E-08	1.515E 06	1.984E-02	2.198E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACKA)	TRAN(TO)	BETA(TO)
10F(I)	1538					
SILF(S)	1603	250	82	.0551	2.273E-01	2.6682E-01
56						

	PIC NO	TIME	(ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	2295(250)	27.43	26.52	2.041E-03	.1331	3.360E-03	.1693	3.250E-03	.1636	2.069E-03
5	3724(250)	27.43	26.52	2.041E-03	.1331	3.360E-03	.1693	3.250E-03	.1636	2.069E-03
1	2296(250)	28.51	27.59	2.589E-03	.1305	3.294E-03	.1660	3.186E-03	.1606	2.012E-03
5	3725(250)	28.51	27.59	2.589E-03	.1305	3.294E-03	.1660	3.186E-03	.1606	2.012E-03
1	2297(250)	29.58	28.67	2.540E-03	.1280	3.231E-03	.1629	3.125E-03	.1575	2.759E-03
5	3726(250)	29.58	28.67	2.540E-03	.1280	3.231E-03	.1629	3.125E-03	.1575	2.759E-03
1	2298(250)	30.66	29.75	2.494E-03	.1257	3.172E-03	.1599	3.065E-03	.1546	2.709E-03
5	3727(250)	30.66	29.75	2.494E-03	.1257	3.172E-03	.1599	3.065E-03	.1546	2.709E-03
1	2299(250)	31.74	30.83	2.450E-03	.1235	3.116E-03	.1571	3.014E-03	.1519	2.661E-03
5	3728(250)	31.74	30.83	2.450E-03	.1235	3.116E-03	.1571	3.014E-03	.1519	2.661E-03
		32.78		MODEL HAS LEFT CENTERLINE						
1	2071(250)	32.84	31.92	2.407E-03	.1213	3.062E-03	.1543	2.962E-03	.1493	2.615E-03
5	3729(250)	32.84	31.92	2.407E-03	.1213	3.062E-03	.1543	2.962E-03	.1493	2.615E-03
1	2071(250)	33.89	32.98	2.368E-03	.1194	3.013E-03	.1519	2.914E-03	.1469	2.573E-03
5	3730(250)	33.89	32.98	2.368E-03	.1194	3.013E-03	.1519	2.914E-03	.1469	2.573E-03
1	2072(250)	34.97	34.05	2.331E-03	.1175	2.965E-03	.1494	2.864E-03	.1445	2.532E-03
5	3731(250)	34.99	34.08	2.330E-03	.1174	2.964E-03	.1494	2.867E-03	.1445	2.531E-03

538

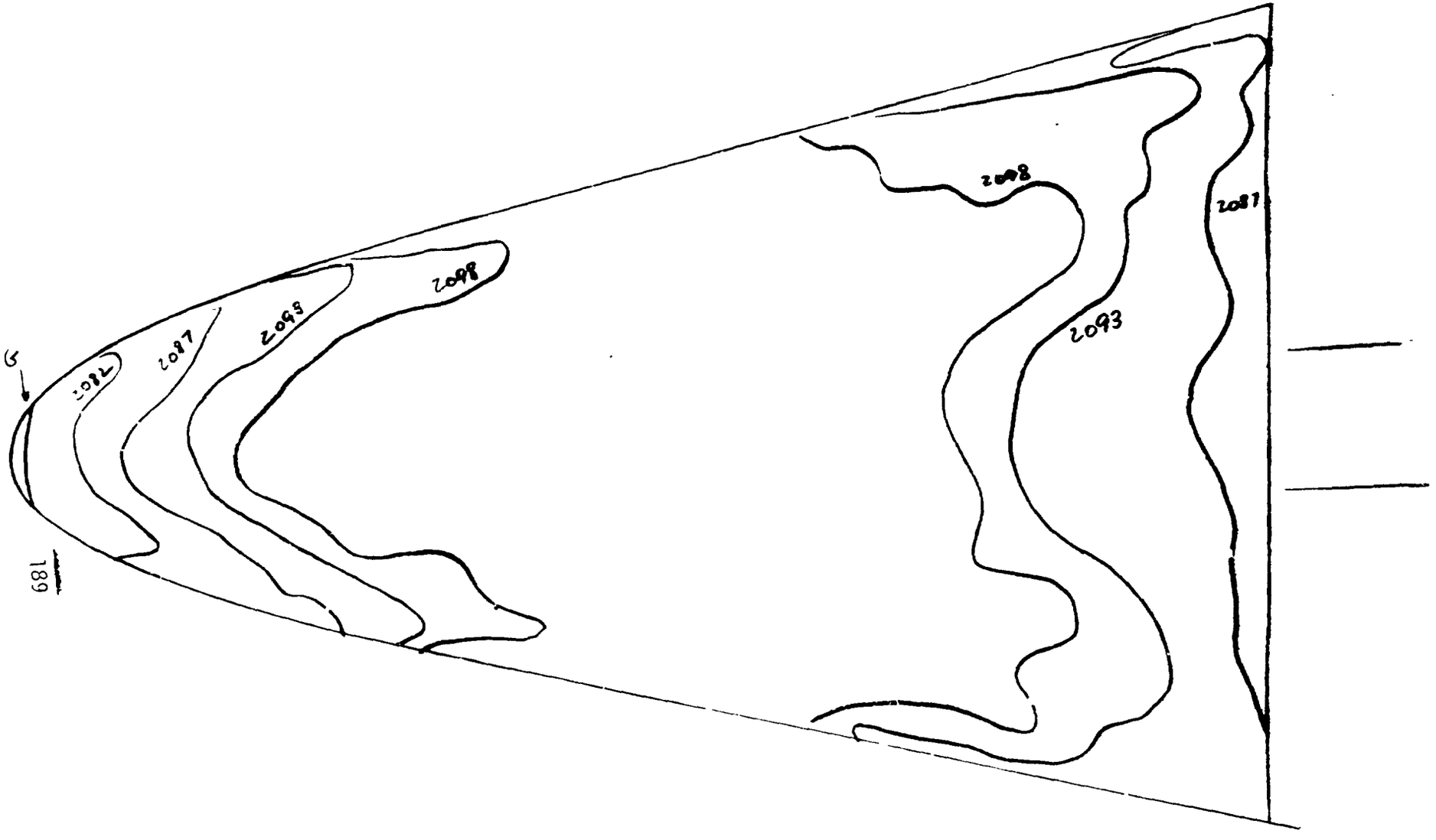
GP 40

320 PSIA
830°F

$T_R = 250°F$

$\alpha = 40°$

2076 1st Frt



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V61P-R2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

RUCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NED
60	H	HCL-HWSI INTERFACE GAP	.070	.040	.050					

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.46	321.5	1261	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR= .040 FT)	SIREF (HR= .040 FT)
93.8	.036	1.519	3778	3.062E-05	7.554E-08	1.521E 06	1.991E-02	2.187E-02

CAMERA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
10P(T)	1538					
SIDE(S)	1603	250	87	.0551	2.215E-01	2.391SE-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
P	2074(250)		.05	MODEL HAS NOT REACHED CENTERLINE						
S	3732(250)		.05	MODEL HAS NOT REACHED CENTERLINE						
P	2075(250)		1.53	MODEL HAS NOT REACHED CENTERLINE						
S	3734(250)		1.53	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.03								
P	2076(250)	2.00	1.69	1.016E-02	.5099	1.240E-02	.6474	1.180E-02	.5930	1.095E-02
S	3735(250)	2.00	1.69	.016E-02	.5093	1.240E-02	.6473	1.180E-02	.5931	1.095E-02
P	2077(250)	3.00	2.77	7.923E-03	.3980	1.008E-02	.5064	9.226E-03	.4635	8.559E-03
S	3736(250)	3.00	2.77	7.923E-03	.3980	1.008E-02	.5064	9.226E-03	.4635	8.559E-03
SG		3.93								
P	2078(250)	4.76	3.84	6.723E-03	.3377	8.553E-03	.4297	7.826E-03	.3932	7.261E-03
S	3737(250)	4.76	3.84	6.723E-03	.3377	8.553E-03	.4297	7.826E-03	.3932	7.261E-03
P	2079(250)	5.86	4.94	5.947E-03	.2977	7.560E-03	.3788	6.901E-03	.3457	6.401E-03
S	3738(250)	5.86	4.94	5.947E-03	.2977	7.560E-03	.3788	6.901E-03	.3457	6.401E-03
P	2080(250)	6.91	5.99	5.352E-03	.2704	6.847E-03	.3460	6.267E-03	.3168	5.813E-03
S	3739(250)	6.91	5.99	5.352E-03	.2704	6.847E-03	.3460	6.267E-03	.3168	5.813E-03
P	2081(250)	8.01	7.12	4.947E-03	.2485	6.294E-03	.3162	5.760E-03	.2894	5.343E-03
S	3740(250)	8.01	7.12	4.947E-03	.2485	6.294E-03	.3162	5.760E-03	.2894	5.343E-03
P	2082(250)	9.09	8.17	4.610E-03	.2316	5.865E-03	.2946	5.367E-03	.2696	4.979E-03
S	3741(250)	9.09	8.17	4.610E-03	.2316	5.865E-03	.2946	5.367E-03	.2696	4.979E-03
P	2083(250)	10.16	9.25	4.333E-03	.2177	5.513E-03	.2769	5.045E-03	.2535	4.680E-03
S	3742(250)	10.16	9.25	4.333E-03	.2177	5.513E-03	.2769	5.045E-03	.2535	4.680E-03
P	2084(250)	11.24	10.32	4.161E-03	.2090	5.218E-03	.2621	4.775E-03	.2399	4.429E-03
S	3743(250)	11.24	10.32	4.161E-03	.2090	5.218E-03	.2621	4.775E-03	.2399	4.429E-03
P	2085(250)	12.31	11.40	3.993E-03	.1961	4.965E-03	.2494	4.544E-03	.2283	4.215E-03
S	3744(250)	12.31	11.40	3.993E-03	.1961	4.965E-03	.2494	4.544E-03	.2283	4.215E-03

WNCUS	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEB	HEW
00	P	HCC-HHSI INTERFACE GAP	.070	.000	.089					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREMEND	ROLL-MODEL	YAW
7.40	171.5	1283	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
93.8	.034	1.570	3778	3.0628E-05	7.5594E-07	1.5221E 06	1.991E-02	2.183E-02

CAPSULE (DEG)	ROLL NO	MAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAN)	TRAN(TO)	BETA(TO)
	1538					
BICE(S)	1603	250	87	.0591	2.215E-01	2.391SE-01

56

	MIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.93TO)	H(.93TO)/HREF	S1(TO)
I	2596(250)	13.42	12.59	3.727E-03	.1872	4.702E-03	.2362	4.334E-03	.2180	4.025E-03
S	3745(250)	13.42	12.59	3.727E-03	.1872	4.702E-03	.2362	4.334E-03	.2180	4.025E-03
I	2597(250)	14.47	13.59	3.574E-03	.1795	4.556E-03	.2288	4.104E-03	.2096	3.806E-03
S	3746(250)	14.47	13.59	3.574E-03	.1795	4.556E-03	.2288	4.104E-03	.2096	3.806E-03
I	2598(250)	15.57	14.65	3.442E-03	.1729	4.379E-03	.2200	4.004E-03	.2013	3.719E-03
S	3747(250)	15.57	14.65	3.442E-03	.1729	4.379E-03	.2200	4.004E-03	.2013	3.718E-03
I	2599(250)	16.64	15.73	3.322E-03	.1669	4.227E-03	.2123	3.894E-03	.1963	3.588E-03
S	3748(250)	16.64	15.73	3.322E-03	.1669	4.227E-03	.2123	3.894E-03	.1963	3.588E-03
I	2600(250)	17.75	16.83	3.212E-03	.1613	4.090E-03	.2053	3.768E-03	.1879	3.469E-03
S	3749(250)	17.75	16.83	3.212E-03	.1613	4.090E-03	.2053	3.768E-03	.1879	3.469E-03
I	2601(250)	18.82	17.91	3.114E-03	.1564	3.962E-03	.1990	3.625E-03	.1821	3.363E-03
S	3750(250)	18.82	17.91	3.114E-03	.1564	3.962E-03	.1990	3.625E-03	.1821	3.363E-03
I	2602(250)	19.90	18.98	3.024E-03	.1519	3.848E-03	.1933	3.521E-03	.1769	3.267E-03
S	3751(250)	19.90	18.98	3.024E-03	.1519	3.848E-03	.1933	3.521E-03	.1769	3.267E-03
I	2603(250)	21.07	21.06	2.942E-03	.1478	3.743E-03	.1880	3.426E-03	.1721	3.174E-03
S	3752(250)	21.00	21.06	2.942E-03	.1477	3.743E-03	.1879	3.426E-03	.1720	3.174E-03
I	2604(250)	22.05	21.14	2.866E-03	.1440	3.647E-03	.1832	3.337E-03	.1677	3.096E-03
S	3753(250)	22.05	21.14	2.866E-03	.1440	3.647E-03	.1832	3.337E-03	.1677	3.096E-03
I	2605(250)	23.15	22.24	2.795E-03	.1404	3.555E-03	.1786	3.254E-03	.1634	3.018E-03
S	3754(250)	23.15	22.24	2.795E-03	.1404	3.555E-03	.1786	3.254E-03	.1634	3.018E-03
I	2606(250)	24.23	23.31	2.729E-03	.1371	3.472E-03	.1744	3.178E-03	.1596	2.944E-03
S	3755(250)	24.23	23.31	2.729E-03	.1371	3.472E-03	.1744	3.178E-03	.1596	2.944E-03
I	2607(250)	25.30	24.39	2.668E-03	.1340	3.395E-03	.1705	3.107E-03	.1561	2.882E-03
S	3756(250)	25.30	24.39	2.668E-03	.1340	3.395E-03	.1705	3.107E-03	.1561	2.882E-03
I	2608(250)	26.38	25.47	2.611E-03	.1312	3.322E-03	.1669	3.040E-03	.1527	2.820E-03
S	3757(250)	26.38	25.47	2.611E-03	.1312	3.322E-03	.1669	3.040E-03	.1527	2.820E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	A/L	DIAM	RER	RSU
4A	0	HCC-HRSI INTERFACE GAP	.070	.000	.000					

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRELHEM	ROLL-MODEL	YAW
7.96	921.5	1283	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (NO .000 FT)	SINREF (NO .000 FT)
93.0	.036	1.5[illegible]	3778	1.162E-05	7.55[illegible]E-06	1.5216 06	1.991E-02	2.1[illegible]E-02

CAMERA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SUDARP MODT (MMDACAR)	TRANS(TO)	BETA(TO)
10P(T)	1538					
SICP(S)	1603	250	87	.0591	2.215E-01	2.9415E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	2094(250)	27.06	26.56	2.5[illegible]E-03	.1285	3.254E-03	.1635	2.97[illegible]E-03	.1496	2.763E-03
5	3756(250)	27.06	26.56	2.5[illegible]E-03	.1285	3.254E-03	.1635	2.97[illegible]E-03	.1496	2.763E-03
1	2106(250)	28.53	27.02	2.5[illegible]E-03	.1280	3.140E-03	.1583	2.92[illegible]E-03	.1467	2.708E-03
5	3756(250)	28.56	27.06	2.5[illegible]E-03	.1280	3.140E-03	.1582	2.91[illegible]E-03	.1464	2.707E-03
		28.68		MODEL HAS LEFT CENTERLINE						
1	2101(250)	29.63	28.72	2.4[illegible]E-03	.1235	3.128E-03	.1572	2.89[illegible]E-03	.1438	2.694E-03
5	3761(250)	29.63	28.72	2.4[illegible]E-03	.1235	3.128E-03	.1572	2.89[illegible]E-03	.1438	2.694E-03
1	2102(250)	30.69	29.77	2.415E-03	.1213	3.073E-03	.1544	2.812E-03	.1413	2.608E-03
5	3761(250)	30.69	29.77	2.415E-03	.1213	3.073E-03	.1544	2.812E-03	.1413	2.608E-03

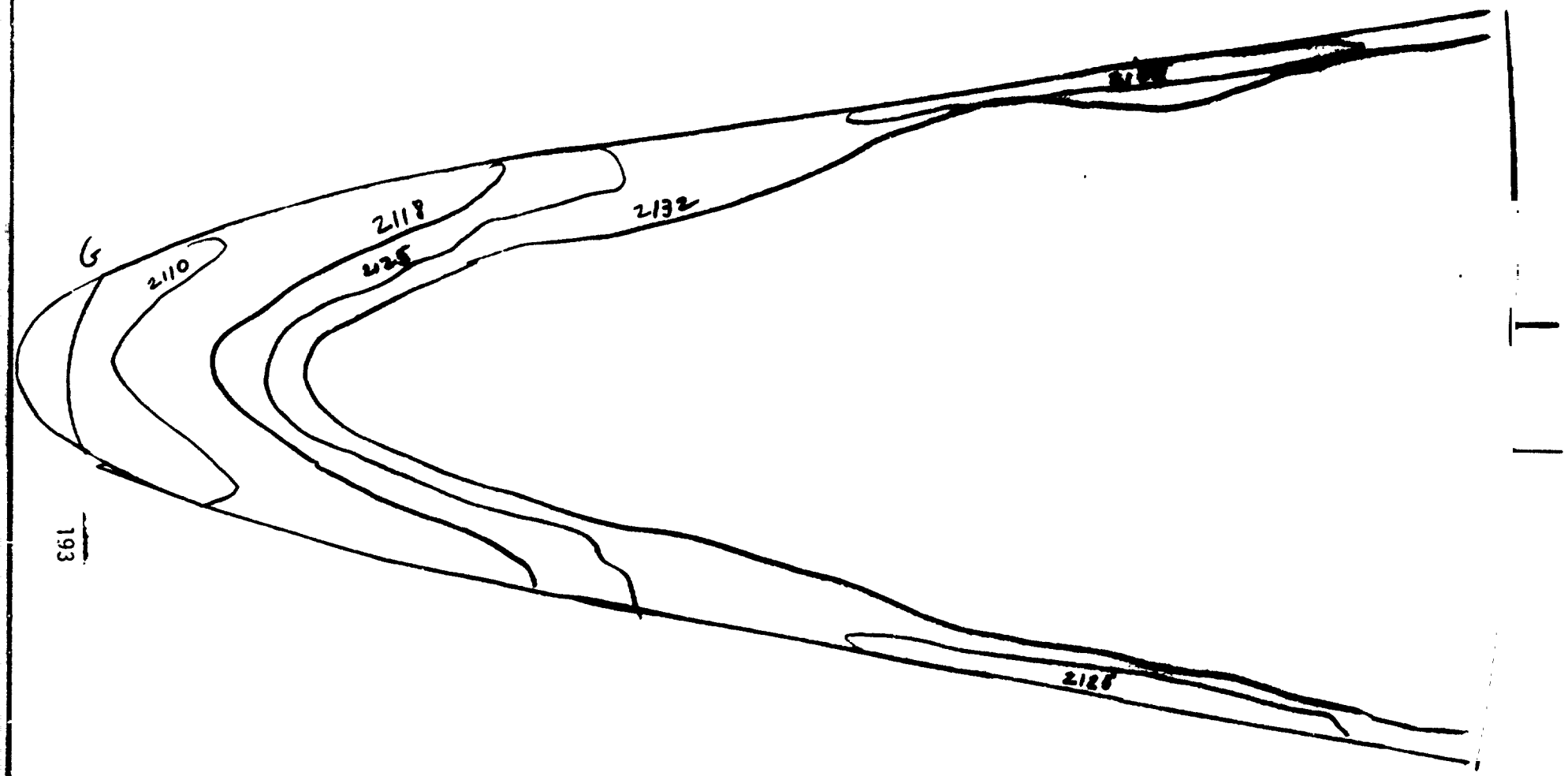
1538
GP 41

320 PSIA
830 °F

T_{pc} = 175°F

$\alpha = 20$

2107 1ST FR ℄



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VON KARMAN GAS DYNAMICS FACILITY
V418-B20 50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG.	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	INJP LOCATION/SIZE TYPE	R/L	DIA.	HER	HEO
01	0	PCL-HWSI INTERFACE GAP	.020	.040	.080					

MACH NO	P0(PSIA)	T0(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREFEND	ROLL-MODEL	YAW
7.96	321.1	1293	20.01	0.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
94.6	.036	1.517	3793	3.018E-05	7.014E-08	1.501E 06	1.992E-02	2.194E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	BETA(TO)
TOP(T)	1530					
SIDE(S)	1203	175	87	.0518	1.179E-01	1.1534E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.492TO)/HREF	ST(TO)
I	2104(175)	.05		MODEL HAS NOT REACHED CENTERLINE						
S	3763(175)	.05		MODEL HAS NOT REACHED CENTERLINE						
I	2105(175)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	3764(175)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.00								
I	2106(175)	2.60	1.70	4.577E-03	.2299	5.065E-03	.2543	5.771E-03	.2897	4.989E-03
S	3765(175)	2.60	1.70	4.577E-03	.2299	5.065E-03	.2543	5.771E-03	.2897	4.989E-03
I	2107(175)	3.68	2.78	3.525E-03	.1769	4.435E-03	.2226	4.518E-03	.2268	3.986E-03
S	3766(175)	3.68	2.78	3.525E-03	.1769	4.435E-03	.2226	4.518E-03	.2268	3.986E-03
INJECT TIME =		3.03								
I	2108(175)	4.78	3.88	3.036E-03	.1523	3.753E-03	.1884	3.824E-03	.1919	3.306E-03
S	3767(175)	4.78	3.88	3.036E-03	.1523	3.753E-03	.1884	3.824E-03	.1919	3.306E-03
I	2109(175)	5.86	4.96	2.684E-03	.1347	3.321E-03	.1667	3.383E-03	.1698	2.925E-03
S	3768(175)	5.86	4.96	2.684E-03	.1347	3.321E-03	.1667	3.383E-03	.1698	2.925E-03
I	2110(175)	6.93	6.03	2.433E-03	.1221	3.010E-03	.1511	3.067E-03	.1539	2.651E-03
S	3769(175)	6.93	6.03	2.433E-03	.1221	3.010E-03	.1511	3.067E-03	.1539	2.651E-03
I	2111(175)	8.01	7.11	2.242E-03	.1125	2.773E-03	.1392	2.825E-03	.1418	2.442E-03
S	3770(175)	8.01	7.11	2.242E-03	.1125	2.773E-03	.1392	2.825E-03	.1418	2.442E-03
I	2112(175)	9.11	8.21	2.078E-03	.1047	2.590E-03	.1295	2.624E-03	.1320	2.273E-03
S	3771(175)	9.11	8.21	2.078E-03	.1047	2.590E-03	.1295	2.624E-03	.1320	2.273E-03
I	2113(175)	10.19	9.29	1.901E-03	.0984	2.426E-03	.1218	2.472E-03	.1241	2.137E-03
S	3772(175)	10.19	9.29	1.901E-03	.0984	2.426E-03	.1218	2.472E-03	.1241	2.137E-03
I	2114(175)	11.26	10.36	1.857E-03	.0932	2.297E-03	.1153	2.340E-03	.1175	2.023E-03
S	3773(175)	11.26	10.36	1.857E-03	.0932	2.297E-03	.1153	2.340E-03	.1175	2.023E-03
I	2115(175)	12.36	11.46	1.707E-03	.0867	2.146E-03	.1097	2.227E-03	.1118	1.925E-03
S	3774(175)	12.36	11.46	1.705E-03	.0866	2.146E-03	.1096	2.225E-03	.1117	1.923E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	HEB
61	0	HCC-HRSI INTERFACE GAP	.020	.040	.080					

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.1	1253	20.01	0.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .060 FT)	STREF (R= .060 FT)
96.6	.036	1.507	3793	3.014E-05	7.614E-08	1.501E 06	1.492E-02	2.199E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAA)	TRAN(TO)	BETA(TO)
10F(1).	1E38					
SILE(S)	1E03	175	87	.9510	1.179E-01	1.153VE-01
S6						

	PTC NO	TIME	DELTIME	H(0)	H(T0)/HREF	H(.9T0)	H(.9T0)/HREF	H(.992T0)	H(.992T0)/HREF	ST(T0)
I	2116(175)	13.44	12.54	1.688E-03	.0847	2.088E-03	.1068	2.127E-03	.1068	1.839E-03
S	3775(175)	13.44	12.54	1.688E-03	.0847	2.088E-03	.1068	2.127E-03	.1068	1.839E-03
I	2117(175)	14.49	13.59	1.621E-03	.0814	2.005E-03	.1007	2.043E-03	.1026	1.766E-03
S	3776(175)	14.52	13.62	1.620E-03	.0813	2.006E-03	.1006	2.041E-03	.1025	1.765E-03
I	2118(175)	15.59	14.69	1.559E-03	.0783	1.929E-03	.0968	1.965E-03	.0986	1.699E-03
S	3777(175)	15.59	14.69	1.559E-03	.0783	1.929E-03	.0968	1.965E-03	.0986	1.699E-03
I	2119(175)	16.67	15.77	1.505E-03	.0756	1.862E-03	.0935	1.897E-03	.0952	1.649E-03
S	3778(175)	16.67	15.77	1.505E-03	.0756	1.862E-03	.0935	1.897E-03	.0952	1.640E-03
I	2120(175)	17.75	16.85	1.456E-03	.0731	1.801E-03	.0904	1.835E-03	.0921	1.587E-03
S	3779(175)	17.75	16.85	1.456E-03	.0731	1.801E-03	.0904	1.835E-03	.0921	1.587E-03
I	2121(175)	18.82	17.92	1.412E-03	.0709	1.746E-03	.0877	1.774E-03	.0893	1.538E-03
S	3780(175)	18.82	17.92	1.412E-03	.0709	1.746E-03	.0877	1.774E-03	.0893	1.534E-03
I	2122(175)	19.90	19.00	1.371E-03	.0688	1.696E-03	.0851	1.724E-03	.0868	1.494E-03
S	3781(175)	19.90	19.00	1.371E-03	.0688	1.696E-03	.0851	1.724E-03	.0868	1.494E-03
I	2123(175)	20.97	20.07	1.334E-03	.0670	1.650E-03	.0829	1.681E-03	.0844	1.453E-03
S	3782(175)	20.97	20.07	1.334E-03	.0670	1.650E-03	.0829	1.681E-03	.0844	1.453E-03
I	2124(175)	22.05	21.15	1.300E-03	.0652	1.608E-03	.0807	1.638E-03	.0822	1.414E-03
S	3783(175)	22.05	21.15	1.300E-03	.0652	1.608E-03	.0807	1.638E-03	.0822	1.414E-03
I	2125(175)	23.13	22.23	1.268E-03	.0636	1.568E-03	.0787	1.596E-03	.0802	1.381E-03
S	3784(175)	23.15	22.25	1.267E-03	.0636	1.567E-03	.0787	1.597E-03	.0802	1.381E-03
I	2126(175)	24.20	23.30	1.233E-03	.0622	1.532E-03	.0749	1.560E-03	.0783	1.349E-03
S	3785(175)	24.20	23.30	1.233E-03	.0622	1.532E-03	.0749	1.560E-03	.0783	1.349E-03
I	2127(175)	25.28	24.38	1.210E-03	.0608	1.497E-03	.0752	1.526E-03	.0766	1.319E-03
S	3786(175)	25.28	24.38	1.210E-03	.0608	1.497E-03	.0752	1.526E-03	.0766	1.319E-03
I	2128(175)	26.36	25.46	1.185E-03	.0595	1.465E-03	.0736	1.493E-03	.0749	1.291E-03
S	3787(175)	26.36	25.46	1.185E-03	.0595	1.465E-03	.0736	1.493E-03	.0749	1.291E-03

WNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	WEB	NEW
41	0	ECC-HNSI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.94	921.1	1293	20.01	0.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
94.0	.036	1.568	3793	7.014E-05	7.614E-06	1.501E 06	1.992E-02	2.194E-02

CAMERA (OPTIC)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGAM)	THAW(TO)	BETA(TO)
	1530					
SICE(S)	1603	175	97	.0518	1.179E-01	1.153E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.09/TO)	H(.092TO)/HREF	ST(TO)
I	2129(175)	27.46	26.56	1.150E-03	.0582	1.435E-03	.0720	1.462E-03	.0734	1.264E-03
S	3788(175)	27.46	26.56	1.150E-03	.0582	1.435E-03	.0720	1.462E-03	.0734	1.264E-03
I	2130(175)	28.53	27.63	1.137E-03	.0571	1.407E-03	.0706	1.433E-03	.0719	1.239E-03
S	3789(175)	28.53	27.63	1.137E-03	.0571	1.407E-03	.0706	1.433E-03	.0719	1.239E-03
I	2131(175)	29.61	28.71	1.115E-03	.0560	1.380E-03	.0693	1.406E-03	.0706	1.215E-03
S	3790(175)	29.61	28.71	1.115E-03	.0560	1.380E-03	.0693	1.406E-03	.0706	1.215E-03
I	2132(175)	30.69	29.73	1.095E-03	.0550	1.355E-03	.0680	1.380E-03	.0693	1.193E-03
S	3791(175)	30.69	29.73	1.095E-03	.0550	1.355E-03	.0680	1.380E-03	.0693	1.193E-03
		30.94		MODEL WAS LEFT CENTERLINE						
I	2133(175)	31.79	30.88	1.075E-03	.0540	1.330E-03	.0668	1.355E-03	.0680	1.172E-03
S	3792(175)	31.79	30.88	1.075E-03	.0540	1.330E-03	.0668	1.355E-03	.0680	1.172E-03
I	2134(175)	32.88	31.94	1.057E-03	.0531	1.308E-03	.0656	1.332E-03	.0669	1.152E-03
S	3793(175)	32.88	31.94	1.057E-03	.0531	1.308E-03	.0656	1.332E-03	.0669	1.152E-03

Data were not obtained for Group 42.

[redacted]

Go 93

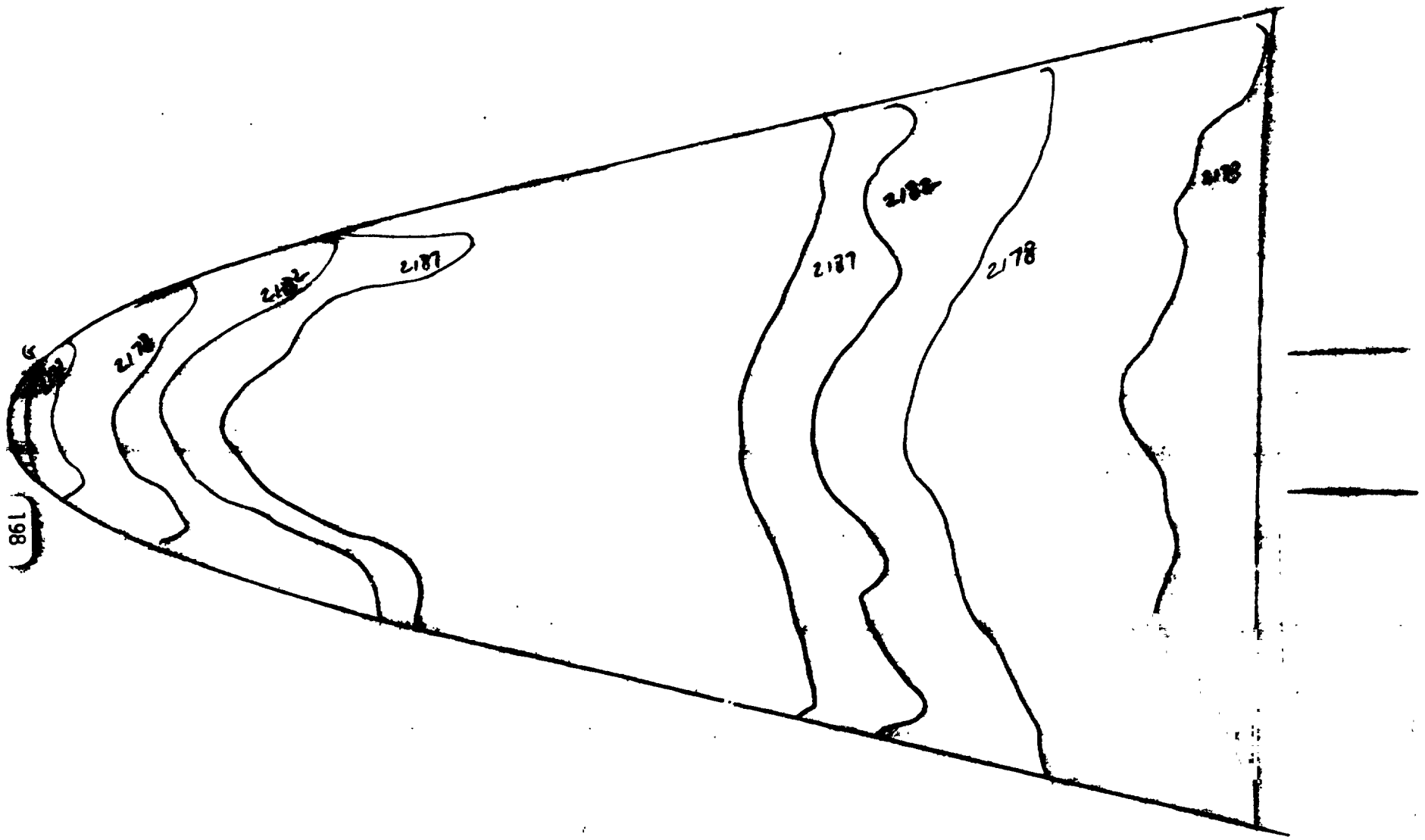
$T_{\infty} = 200°F$

2170 for [redacted]

426 PSIA

840°F

$\alpha = 40°$



VON KARMAN GAS DYNAMICS FACILITY

V41H-820 50 INCH HYPERSONIC TUNNEL B

WHOLE CONFIG		*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE			TRIP LOCATION/SIZE		MEG	MEO
			S/L	WIDTH	DEPTH	TYPE	S/L	DIA.	
43	0	MCC-HNSI INTERFACE GAP	.020	.040	.000				

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWENR	ROLL-MODEL	TOO
7.00	426.9	1295	20.00	-0.00	20.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	RTREF (RE .040 FT)
94.2	.066	1.041	3797	3.346E-05	7.593E-08	1.577E 06	2.205E-02	1.017E-02

ZAPPEA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	TRAN(TO)	WETATTO)
(OF(II)	1830					
SICE(S)	1403	250	82	.0591	7.230E-01	2.411OE-01

SG

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
I	2167(250)	.05		MODEL HAS NOT REACHED CENTERLINE						
S	3426(250)	.05		MODEL HAS NOT REACHED CENTERLINE						
I	2168(250)	1.03		MODEL HAS NOT REACHED CENTERLINE						
S	3427(250)	1.03		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			3.03							
I	2169(250)	2.00	1.69	1.022E-02	.4472	1.246E-02	.5670	1.187E-02	.5196	6.443E-03
S	3428(250)	2.00	1.69	1.022E-02	.4472	1.246E-02	.5670	1.187E-02	.5196	6.443E-03
I	2170(250)	3.70	2.74	7.952E-03	.3480	1.002E-02	.4411	9.239E-03	.4043	6.569E-03
S	3429(250)	3.70	2.74	7.952E-03	.3480	1.002E-02	.4411	9.239E-03	.4043	6.569E-03
SG			3.93							
I	2171(250)	4.76	3.86	6.777E-03	.2966	8.592E-03	.3760	7.874E-03	.3446	5.569E-03
S	3430(250)	4.76	3.86	6.777E-03	.2966	8.592E-03	.3760	7.874E-03	.3446	5.569E-03
I	2172(250)	5.66	4.94	5.975E-03	.2615	7.574E-03	.3315	6.942E-03	.3038	4.934E-03
S	3431(250)	5.66	4.94	5.975E-03	.2615	7.574E-03	.3315	6.942E-03	.3038	4.934E-03
I	2173(250)	6.63	6.02	5.415E-03	.2369	6.864E-03	.3004	6.291E-03	.2753	4.473E-03
S	3432(250)	6.63	6.02	5.415E-03	.2369	6.864E-03	.3004	6.291E-03	.2751	4.473E-03
I	2174(250)	8.61	7.19	4.947E-03	.2162	6.322E-03	.2767	5.794E-03	.2536	4.120E-03
S	3433(250)	8.61	7.19	4.947E-03	.2162	6.322E-03	.2767	5.794E-03	.2536	4.120E-03
S	3434(250)	9.69	8.17	4.647E-03	.2034	5.941E-03	.2598	5.399E-03	.2363	3.839E-03
I	2175(250)	9.11	8.20	4.604E-03	.2030	5.882E-03	.2574	5.391E-03	.2359	3.833E-03
I	2176(250)	10.16	9.29	4.308E-03	.1912	5.534E-03	.2423	5.075E-03	.2221	3.609E-03
S	3435(250)	10.16	9.29	4.308E-03	.1912	5.534E-03	.2423	5.075E-03	.2221	3.609E-03
I	2177(250)	11.26	10.39	4.129E-03	.1807	5.235E-03	.2291	4.798E-03	.2100	3.411E-03
S	3436(250)	11.26	10.39	4.129E-03	.1807	5.235E-03	.2291	4.798E-03	.2100	3.411E-03
I	2178(250)	12.36	11.49	3.938E-03	.1728	4.982E-03	.2180	4.566E-03	.1998	3.267E-03
S	3437(250)	12.36	11.49	3.938E-03	.1728	4.982E-03	.2180	4.566E-03	.1998	3.267E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REW
43	4	RCL-MHSI INTERFACE GAP	.920	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEN.	ROLL-MODEL	YAW
7.98	426.9	1295	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
9.9	.044	1.981	3797	3.456E-05	7.593E-08	1.577E 06	2.285E-02	1.917E-02

CAPEGA (OF(I) >ICE(S) >G	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKR)	THAR(TO)	BETA(TO)
	1538					
	1603	250	82	.9591	2.230E-01	2.4110E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	2179(250)	13.44	12.53	3.753E-03	.164	4.758E-03	.2082	4.361E-03	.1908	3.101E-03
>	3P3P(250)	13.44	12.53	3.753E-03	.164	4.758E-03	.2082	4.361E-03	.1908	3.101E-03
I	2180(250)	14.52	13.60	3.602E-03	.1576	4.566E-03	.1998	4.185E-03	.1831	2.975E-03
>	3P3Y(250)	14.52	13.60	3.602E-03	.1576	4.566E-03	.1998	4.185E-03	.1831	2.975E-03
>	3P4(250)	15.57	14.65	3.470E-03	.1519	4.399E-03	.1925	4.032E-03	.1764	2.867E-03
I	2181(250)	15.59	14.67	3.467E-03	.1517	4.396E-03	.1924	4.029E-03	.1763	2.864E-03
I	2182(250)	16.67	15.76	3.347E-03	.1465	4.243E-03	.1857	3.888E-03	.1702	2.765E-03
>	3P41(250)	16.67	15.76	3.347E-03	.1465	4.243E-03	.1857	3.888E-03	.1702	2.765E-03
I	2183(250)	17.75	16.83	3.238E-03	.1417	4.105E-03	.1796	3.762E-03	.1646	2.675E-03
>	3P42(250)	17.75	16.83	3.238E-03	.1417	4.105E-03	.1796	3.762E-03	.1646	2.675E-03
I	2184(250)	18.85	17.93	3.137E-03	.1373	3.977E-03	.1740	3.645E-03	.1595	2.591E-03
>	3P43(250)	18.85	17.93	3.137E-03	.1373	3.977E-03	.1740	3.645E-03	.1595	2.591E-03
I	2185(250)	19.92	19.01	3.047E-03	.1333	3.863E-03	.1690	3.540E-03	.1549	2.517E-03
>	3P44(250)	19.92	19.01	3.047E-03	.1333	3.863E-03	.1690	3.540E-03	.1549	2.517E-03
I	2186(250)	21.00	20.09	2.964E-03	.1297	3.758E-03	.1644	3.444E-03	.1507	2.449E-03
>	3P45(250)	21.00	20.09	2.964E-03	.1297	3.758E-03	.1644	3.444E-03	.1507	2.449E-03
I	2187(250)	22.08	21.16	2.888E-03	.1264	3.661E-03	.1602	3.355E-03	.1468	2.386E-03
>	3P46(250)	22.08	21.16	2.888E-03	.1264	3.661E-03	.1602	3.355E-03	.1468	2.386E-03
I	2188(250)	23.15	22.24	2.817E-03	.1233	3.571E-03	.1563	3.273E-03	.1432	2.327E-03
>	3P47(250)	23.15	22.24	2.817E-03	.1233	3.571E-03	.1563	3.273E-03	.1432	2.327E-03
		24.18		MODEL HAS LEFT CENTERLINE						
I	2189(250)	24.23	23.31	2.751E-03	.1204	3.488E-03	.1526	3.197E-03	.1399	2.273E-03
>	3P48(250)	24.23	23.31	2.751E-03	.1204	3.488E-03	.1526	3.197E-03	.1399	2.273E-03
I	2190(250)	25.30	24.39	2.690E-03	.1177	3.410E-03	.1492	3.125E-03	.1368	2.222E-03
>	3P49(250)	25.30	24.39	2.690E-03	.1177	3.410E-03	.1492	3.125E-03	.1368	2.222E-03

V414-H24

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

WRCLR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HEW
A3	A	HCC-HAS1 INTERFACE GAP	.029	.049	.088					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	426.9	1255	39.98	-4.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SINEF (RE .040 FT)
94.3	.044	1.941	3797	3.354E-05	7.593E-08	1.5772 06	2.285E-02	1.917E-02

LAMBDA (DEG)	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SURGAF ROOT (RMGACAN)	TRAN(TO)	HETA(TO)
SICE(S)	1538 1603	250	82	.0541	2.230E-01	2.611UE-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.93*TO)	H(.93*TO)/HREF	ST(TO)
1	2191(250-1)	24.28	25.67	2.632E-03	.1152	3.337E-03	.1460	3.054E-03	.1336	2.175E-03
5	2195(250)	24.38	25.67	2.632E-03	.1152	3.337E-03	.1460	3.054E-03	.1336	2.175E-03

538

GP 44

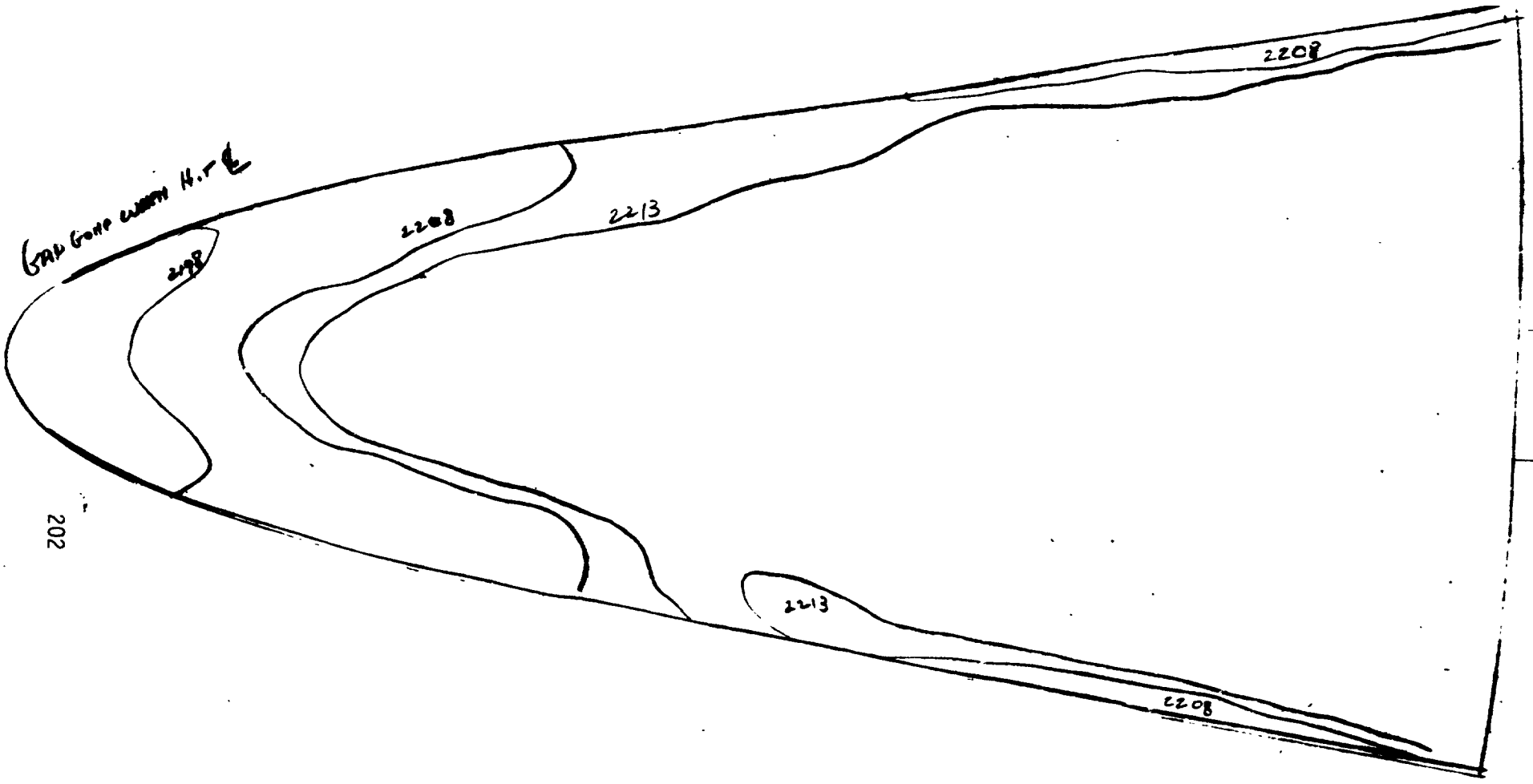
$\alpha = 20$

2196 ℄

425 PSIA

840°F

$T_{PC} = 175°F$



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V614-R2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REX	REU
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
44	P	HCL-HRSI INTERFACE GAP	.020	.040	.080				

MACH NO	P(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	.2408	1200	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	STREF (R= .040 FT)
93.5	.044	1.472	3781	3.345E-05	7.52RE-06	1.593E 06	2.276E-02	1.412E-02

(AREA (DEG R)	HULL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACRA)	TRAN(TO)	HL (TO)
SIDE(S)	1538					
50	1693	175	42	.0518	1.253E-01	1.2334E-01

	FIC NO	TIME (DELTIME)	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.692TO)	H(.692TO)/HREF	ST(TO)
1	2193(175)	.50	MODEL HAS NOT REACHED CENTERLINE						
5	3552(175)	.50	MODEL HAS NOT REACHED CENTERLINE						
1	2194(175)	1.55	MODEL HAS NOT REACHED CENTERLINE						
5	3553(175)	1.55	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63							
1	2195(175)	2.63 1.71	4.879E-03	.2144	6.045E-03	.2656	6.154E-03	.2705	4.052E-03
5	3554(175)	2.63 1.71	4.879E-03	.2144	6.045E-03	.2656	6.154E-03	.2705	4.052E-03
1	2196(175)	3.70 2.79	3.826E-03	.1680	4.738E-03	.2082	4.827E-03	.2121	3.176E-03
5	3555(175)	3.70 2.79	3.826E-03	.1680	4.738E-03	.2082	4.827E-03	.2121	3.176E-03
56		3.95							
1	2197(175)	4.78 3.87	3.249E-03	.1427	4.025E-03	.1768	4.100E-03	.1802	2.698E-03
5	3556(175)	4.78 3.87	3.249E-03	.1427	4.025E-03	.1768	4.100E-03	.1802	2.698E-03
1	2198(175)	5.88 4.97	2.906E-03	.1259	3.551E-03	.1540	3.611E-03	.1589	2.380E-03
5	3557(175)	5.88 4.97	2.906E-03	.1259	3.551E-03	.1540	3.611E-03	.1589	2.380E-03
1	2199(175)	6.96 6.04	2.595E-03	.1142	3.219E-03	.1414	3.278E-03	.1441	2.158E-03
5	3558(175)	6.96 6.04	2.595E-03	.1142	3.219E-03	.1414	3.278E-03	.1441	2.158E-03
1	2200(175)	8.03 7.12	2.344E-03	.1052	2.966E-03	.1303	3.022E-03	.1328	1.988E-03
5	3559(175)	8.03 7.12	2.344E-03	.1052	2.966E-03	.1303	3.022E-03	.1328	1.988E-03
1	2201(175)	9.11 8.21	2.232E-03	.0980	2.765E-03	.1215	2.816E-03	.1237	1.853E-03
5	3560(175)	9.11 8.21	2.232E-03	.0980	2.765E-03	.1215	2.816E-03	.1237	1.853E-03
1	2202(175)	10.19 9.27	2.045E-03	.0922	2.549E-03	.1142	2.644E-03	.1183	1.742E-03
5	3561(175)	10.21 9.33	2.045E-03	.0921	2.546E-03	.1140	2.644E-03	.1182	1.740E-03
1	2203(175)	11.29 10.37	1.946E-03	.0871	2.457E-03	.1080	2.503E-03	.1100	1.647E-03
5	3562(175)	11.29 10.37	1.946E-03	.0871	2.457E-03	.1080	2.503E-03	.1100	1.647E-03
1	2204(175)	12.34 11.43	1.805E-03	.0930	2.342E-03	.1029	2.386E-03	.1048	1.570E-03
5	3563(175)	12.34 11.43	1.805E-03	.0930	2.342E-03	.1029	2.386E-03	.1048	1.570E-03

WNCUP. CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE			TRIP LOCATION/SIZE		HEA	NEW
		X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
44 H	HCC-HMS1 INTERFACE GAP	.020	.000	.000				

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-DRENEND	ROLL-MODEL	YAW
7.98	424.0	1284	19.98	19.87	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RN-INF (SLUG-S/FT3)	RE-INF (LM-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	SREF (RE .060 FT)
93.0	.040	1.972	3781	7.6496E-05	7.5285E-08	1.5331E 05	2.2765E-02	1.9125E-02

CAMERA (DEG F)	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUACSA)	TRAN(TO)	BETA(TO)
STEP (S)	1538					
56	1603	175	42	.0518	1.253E-01	1.234E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.01C)	H(.01C)/HREF	H(.002TO)	H(.002TO)/HREF	ST(TO)
1	2235(175)	13.44	12.53	1.0655E-03	.0793	2.236E-03	.0943	2.27[illegible]E-03	.1001	1.459E-03
5	3[illegible](175)	13.44	12.53	1.0[illegible]E-03	.0793	2.236E-03	.0943	2.27[illegible]E-03	.1001	1.459E-03
1	2236(175)	14.49	13.54	1.7[illegible]E-03	.0767	2.148E-03	.0966	2.14[illegible]E-03	.0961	1.440E-03
5	3[illegible](175)	14.49	13.54	1.7[illegible]E-03	.0767	2.148E-03	.0966	2.14[illegible]E-03	.0961	1.440E-03
1	2237(175)	15.59	14.64	1.6[illegible]E-03	.0733	2.066E-03	.0926	2.10[illegible]E-03	.0925	1.385E-03
5	3[illegible](175)	15.59	14.64	1.6[illegible]E-03	.0733	2.066E-03	.0926	2.10[illegible]E-03	.0925	1.385E-03
1	2238(175)	16.67	15.74	1.6[illegible]E-03	.0707	1.994E-03	.0876	2.031E-03	.0903	1.337E-03
5	3[illegible](175)	16.67	15.74	1.6[illegible]E-03	.0707	1.994E-03	.0876	2.031E-03	.0903	1.337E-03
1	2239(175)	17.75	16.83	1.5[illegible]E-03	.0686	1.929E-03	.0848	1.965E-03	.0866	1.293E-03
5	3[illegible](175)	17.75	16.83	1.5[illegible]E-03	.0686	1.929E-03	.0848	1.965E-03	.0866	1.293E-03
1	2240(175)	18.82	17.91	1.5[illegible]E-03	.0663	1.879E-03	.0832	1.905E-03	.0837	1.254E-03
5	3[illegible](175)	18.82	17.91	1.5[illegible]E-03	.0663	1.879E-03	.0832	1.905E-03	.0837	1.254E-03
1	2241(175)	19.90	18.99	1.5[illegible]E-03	.0644	1.817E-03	.0798	1.851E-03	.0813	1.214E-03
5	3[illegible](175)	19.90	18.99	1.5[illegible]E-03	.0644	1.817E-03	.0798	1.851E-03	.0813	1.214E-03
1	2242(175)	20.97	20.06	1.4[illegible]E-03	.0627	1.767E-03	.0777	1.803E-03	.0791	1.185E-03
1	2243(175)	22.05	21.14	1.4[illegible]E-03	.0627	1.767E-03	.0776	1.803E-03	.0791	1.185E-03
5	3[illegible](175)	22.05	21.14	1.3[illegible]E-03	.0611	1.722E-03	.0756	1.756E-03	.0771	1.156E-03
		22.05		1.3[illegible]E-03	.0611	1.722E-03	.0756	1.756E-03	.0771	1.156E-03
			MODEL HAS LEFT CENTERLINE							
1	2244(175)	23.13	22.21	1.3[illegible]E-03	.0596	1.678E-03	.0736	1.711E-03	.0752	1.126E-03
5	3[illegible](175)	23.13	22.21	1.3[illegible]E-03	.0596	1.678E-03	.0736	1.711E-03	.0752	1.126E-03

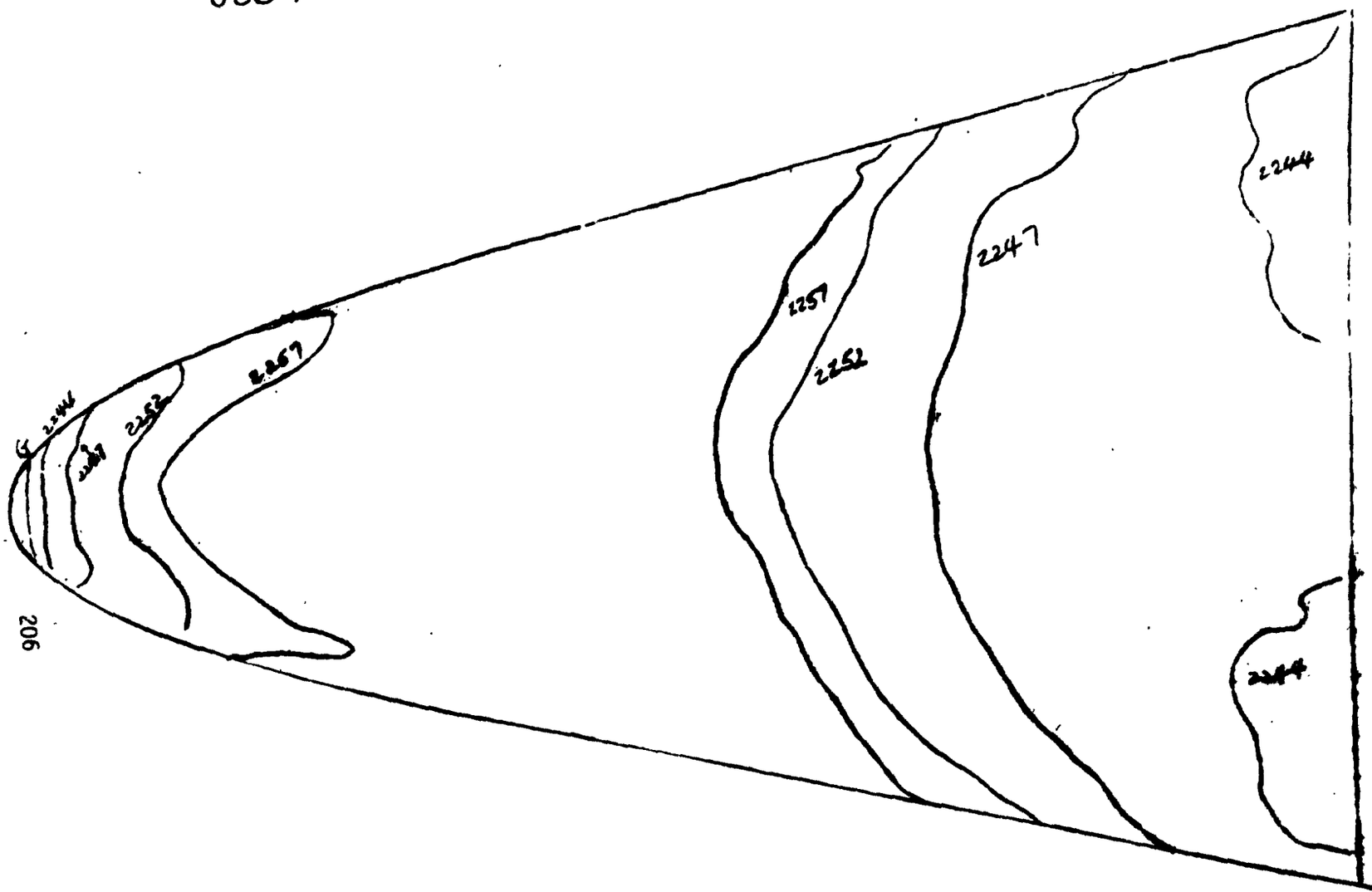
PHOTO IS STATIC SHO A = 0000000000000275 CALL FROM 71756

Data were not obtained for Group 45.

1538 $T_{AC} = 300°F$ 2248 ℄

GP 46 555 PSIA
860°F

$\alpha = 40°$



NASA-HI OH 5A

V61H-420

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

10- 7-74 PAGE 1

SHOT	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HEW
4A	B	HCC-HRSI INTERFACE GAP	.079	.000	.000					

MACH NO	PO(PSIA)	TO(DEG K)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	555.7	1312	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB*SEC/FT2)	RE/FT (FT-1)	RHEF (RE .060 FT)	STREF (RE .060 FT)
95.3	.052	2.595	4923	5.051E-05	7.075E-08	2.516E 06	2.604E-02	1.69HE-02

CAPSHA	HOLE NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HHCACAP)	TRAN(TO)	HETA(TO)
10F(1)	1530					
5TLE(5)	1603	253	70	.0551	2.211E-01	2.345HE-01
5G						

	PTC NO	TIME	DELTTHE	H(TO)	H(TO)/HREF	H(.910TO)	H(.910TO)/HREF	H(.930TO)	H(.930TO)/HREF	ST(TO)
1	223*(250)	.03		MODEL HAS NOT REACHED CENTERLINE						
5	3494(250)	.08		MODEL HAS NOT REACHED CENTERLINE						
1	224 (250)	1.03		MODEL HAS NOT REACHED CENTERLINE						
5	3494(250)	1.03		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.05							
1	224(250)	2.00	1.69	1.017E-02	.3947	1.2H2E-02	.4921	1.177E-02	.4517	6.51HE-03
5	350(250)	2.00	1.66	1.016E-02	.3947	1.2H2E-02	.4921	1.177E-02	.4517	6.51HE-03
1	224(250)	3.03	2.75	7.925E-03	.3041	1.031E-02	.3960	9.185E-03	.3525	5.06HE-03
5	350(250)	3.03	2.74	7.925E-03	.3041	1.031E-02	.3960	9.185E-03	.3525	5.06HE-03
5G		3.93								
1	224(250)	4.78	3.86	6.676E-03	.2570	8.695E-03	.3345	7.762E-03	.2979	4.299E-03
5	350(250)	4.78	3.85	6.676E-03	.2570	8.695E-03	.3345	7.762E-03	.2979	4.299E-03
1	224(250)	5.06	4.93	5.921E-03	.2272	7.676E-03	.2944	6.862E-03	.2634	3.800E-03
5	350(250)	5.06	4.93	5.921E-03	.2272	7.676E-03	.2944	6.862E-03	.2634	3.800E-03
1	224(250)	5.53	5.01	5.395E-03	.2059	6.773E-03	.2599	6.217E-03	.2386	3.443E-03
5	350(250)	5.53	5.01	5.395E-03	.2059	6.773E-03	.2599	6.217E-03	.2386	3.443E-03
1	224(250)	6.01	7.09	4.960E-03	.1896	6.237E-03	.2394	5.725E-03	.2197	3.171E-03
5	350(250)	6.01	7.09	4.960E-03	.1896	6.237E-03	.2394	5.725E-03	.2197	3.171E-03
1	224(250)	9.09	9.14	4.602E-03	.1766	5.811E-03	.2230	5.336E-03	.2047	2.954E-03
5	350(250)	9.09	9.14	4.602E-03	.1766	5.811E-03	.2230	5.336E-03	.2047	2.954E-03
1	224(250)	11.16	9.23	4.326E-03	.1660	5.462E-03	.2096	5.014E-03	.1924	2.777E-03
5	350(250)	11.16	9.23	4.326E-03	.1660	5.462E-03	.2096	5.014E-03	.1924	2.777E-03
1	224(250)	11.24	10.31	4.094E-03	.1571	5.169E-03	.1984	4.745E-03	.1821	2.628E-03
5	350(250)	11.24	10.31	4.094E-03	.1571	5.169E-03	.1984	4.745E-03	.1821	2.628E-03
1	225(250)	12.31	11.39	3.896E-03	.1495	4.919E-03	.1888	4.515E-03	.1733	2.501E-03
5	350(250)	12.31	11.39	3.896E-03	.1495	4.919E-03	.1888	4.515E-03	.1733	2.501E-03

WHGUF CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			MEA	MED
6A	A	HCC-HMSI INTERFACE GAP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
			.320	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRIMEND	ROLL-MODEL	YAW
7.99	855.7	1312	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	DINEF (RE .040 FT)
95.3	.057	2.589	3823	5.051E-05	7.675E-06	2.510E 06	2.406E-02	1.694E-02

CAMERA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUSHE MOOT (HMCALAR)	TRAN(TO)	HETA(TO)
10F(S)	1534					
5LE(S)	1403	250	70	.0551	2.211E-01	2.345E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
4	2251(250)	14.39	12.66	3.724E-03	.1429	4.702E-03	.1806	4.318E-03	.1658	2.390E-03
5	3511(250)	14.39	12.66	3.724E-03	.1429	4.702E-03	.1806	4.318E-03	.1658	2.390E-03
4	2252(250)	14.49	13.56	3.559E-03	.1373	4.507E-03	.1730	4.137E-03	.1588	2.291E-03
5	3511(250)	14.49	13.56	3.559E-03	.1370	4.507E-03	.1730	4.137E-03	.1588	2.291E-03
4	2253(250)	15.57	14.64	3.436E-03	.1318	4.338E-03	.1665	3.982E-03	.1528	2.205E-03
5	3512(250)	15.57	14.64	3.436E-03	.1314	4.338E-03	.1665	3.982E-03	.1528	2.205E-03
4	2254(250)	16.64	15.72	3.316E-03	.1273	4.187E-03	.1607	3.843E-03	.1475	2.128E-03
5	3513(250)	16.64	15.72	3.316E-03	.1273	4.187E-03	.1607	3.843E-03	.1475	2.128E-03
4	2255(250)	17.72	16.79	3.205E-03	.1231	4.050E-03	.1554	3.715E-03	.1427	2.059E-03
5	3514(250)	17.72	16.79	3.205E-03	.1231	4.050E-03	.1554	3.715E-03	.1427	2.059E-03
4	2256(250)	18.80	17.87	3.110E-03	.1193	3.927E-03	.1507	3.605E-03	.1383	1.996E-03
5	3515(250)	18.80	17.87	3.110E-03	.1193	3.927E-03	.1507	3.605E-03	.1383	1.996E-03
4	2257(250)	19.90	18.97	3.018E-03	.1159	3.811E-03	.1462	3.495E-03	.1342	1.937E-03
5	3516(250)	19.90	18.97	3.018E-03	.1159	3.811E-03	.1462	3.495E-03	.1342	1.937E-03
4	2258(250)	20.97	20.05	2.930E-03	.1127	3.707E-03	.1423	3.403E-03	.1306	1.885E-03
5	3517(250)	20.97	20.05	2.930E-03	.1127	3.707E-03	.1423	3.403E-03	.1306	1.885E-03
4	2259(250)	22.05	21.12	2.850E-03	.1098	3.611E-03	.1386	3.315E-03	.1272	1.836E-03
5	3518(250)	22.05	21.12	2.850E-03	.1098	3.611E-03	.1386	3.315E-03	.1272	1.836E-03
4	2260(250)	23.15	22.22	2.785E-03	.1070	3.521E-03	.1351	3.232E-03	.1240	1.790E-03
5	3519(250)	23.15	22.22	2.785E-03	.1070	3.521E-03	.1351	3.232E-03	.1240	1.790E-03
		23.33		MODEL HAS LEFT CENTERLINE						
5	3520(250)	24.20	23.29	2.725E-03	.1046	3.440E-03	.1320	3.155E-03	.1212	1.749E-03
4	2261(250)	24.23	23.3	2.725E-03	.1045	3.439E-03	.1320	3.155E-03	.1211	1.749E-03
4	2262(250)	25.30	24.36	2.663E-03	.1022	3.362E-03	.1290	3.084E-03	.1184	1.709E-03
5	3521(250)	25.30	24.36	2.663E-03	.1022	3.362E-03	.1290	3.084E-03	.1184	1.709E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEX	HEU
4A	B	FCC-M/SI INTERFACE GAP	.920	.049	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	855.7	1312	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH= .040 FT)	STREF (RH= .040 FT)
95.3	.057	2.565	3023	5.051E-05	7.675E-08	7.516E 06	2.088E-02	1.698E-02

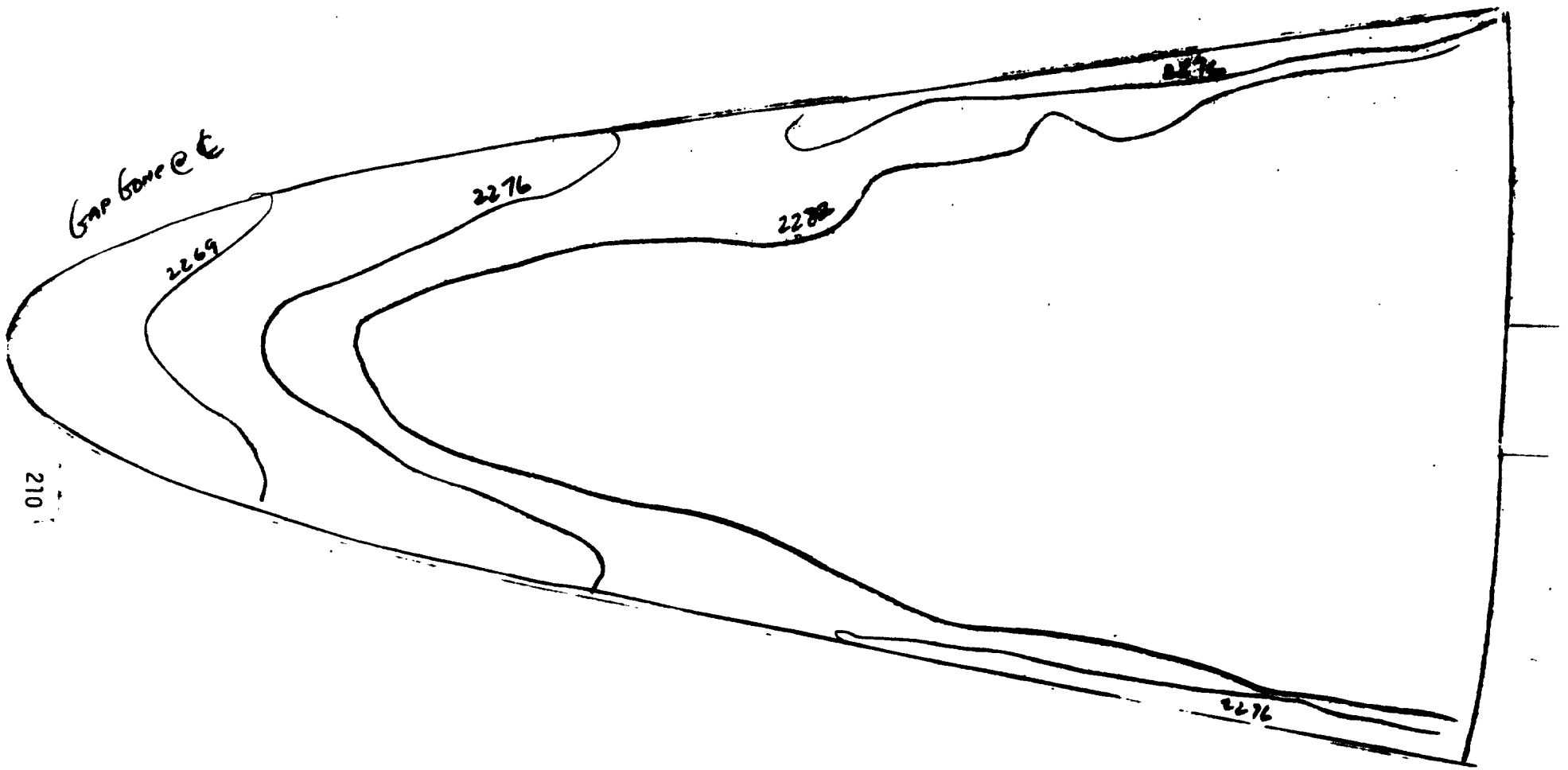
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAM)	TRAP(TO)	BETA(TO)
10P(1)	1536					
SICF(S)	1603	250	70	.9991	2.211E-01	2.345E-01
56						

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)

1538 T_{RC} = 175°F α = 20 2267 ℄

GP47 555 PSIA

860°F



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	MES	MED
47	8	RCC-MMSI INTERFACE GAP	.020	.000	.040					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.99	556.2	1315	20.02	9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (FT/SEC)	V-INF	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SINEF (RE .040 FT)
95.5	.057	2.567	3826	5.746E-05	7.887E-08	2.512E 06	2.409E-02	1.699E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKR)	TRAN(TO)	BETA(TO)
(OF(T)	1538					
SIDE(S)	1603	175	83	.0519	1.142E-01	1.107E-01
SG						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.9TC)	M(.9TC)/MREF	M(.892TO)	M(.892TO)/MREF	ST(TO)
1	2264(175)	.08		MODEL HAS NOT REACHED CENTERLINE						
5	3929(175)	.08		MODEL HAS NOT REACHED CENTERLINE						
1	2265(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
5	3926(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.60							
1	2266(175)	2.63	1.73	.6605E-03	.1764	5.671E-03	.2175	5.774E-03	.2214	2.964E-03
5	3925(175)	2.63	1.73	.6605E-03	.1764	5.671E-03	.2175	5.774E-03	.2214	2.964E-03
1	2267(175)	3.70	2.80	3.011E-03	.1355	4.452E-03	.1707	4.533E-03	.1738	2.327E-03
5	3926(175)	3.70	2.80	3.011E-03	.1355	4.452E-03	.1707	4.533E-03	.1738	2.327E-03
SG			3.95							
1	2268(175)	4.78	3.88	3.070E-03	.1177	3.785E-03	.1451	3.854E-03	.1478	1.978E-03
5	3927(175)	4.78	3.88	3.070E-03	.1177	3.785E-03	.1451	3.854E-03	.1478	1.978E-03
1	2269(175)	5.86	4.96	2.716E-03	.1042	3.349E-03	.1284	3.410E-03	.1308	1.750E-03
5	3928(175)	5.86	4.96	2.716E-03	.1042	3.349E-03	.1284	3.410E-03	.1308	1.750E-03
1	2270(175)	6.93	6.03	2.462E-03	.0944	3.035E-03	.1164	3.091E-03	.1185	1.586E-03
5	3929(175)	6.93	6.03	2.462E-03	.0944	3.035E-03	.1164	3.091E-03	.1185	1.586E-03
1	2271(175)	8.01	7.11	2.288E-03	.0878	2.749E-03	.1072	2.847E-03	.1092	1.461E-03
5	3930(175)	8.01	7.11	2.288E-03	.0878	2.749E-03	.1072	2.847E-03	.1092	1.461E-03
1	2272(175)	9.11	8.21	2.111E-03	.0809	2.662E-03	.1048	2.650E-03	.1016	1.360E-03
5	3931(175)	9.11	8.21	2.111E-03	.0809	2.662E-03	.1048	2.650E-03	.1016	1.360E-03
1	2273(175)	10.19	9.29	1.956E-03	.0751	2.447E-03	.0938	2.491E-03	.0955	1.279E-03
5	3932(175)	10.19	9.29	1.956E-03	.0751	2.447E-03	.0938	2.491E-03	.0955	1.279E-03
1	2274(175)	11.26	10.36	1.817E-03	.0720	2.316E-03	.0888	2.350E-03	.0904	1.210E-03
5	3933(175)	11.26	10.36	1.817E-03	.0720	2.316E-03	.0888	2.350E-03	.0904	1.210E-03
1	2275(175)	12.36	11.46	1.705E-03	.0685	2.202E-03	.0844	2.242E-03	.0860	1.151E-03
5	3934(175)	12.36	11.46	1.705E-03	.0685	2.202E-03	.0844	2.242E-03	.0860	1.151E-03

WNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
47	P	ACC-MMSI INTERFACE GAP	.020	.049	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTON	ALPHA-PREMENU	ROLL-MODEL	YAW
7.99	556.2	1315	20.02	9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	STREF (R= .040 FT)
95.5	.057	2.567	3826	5.048E-05	7.647E-08	2.512E 06	2.604E-02	1.699E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
10H(1)	1534					
SIDE(S)	1603	175	83	.0514	1.192E-01	1.1676E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	2276(175)	13.42	12.52	1.710E-03	.0656	2.109E-03	.0808	2.140E-03	.0823	1.101E-03
5	3935(175)	13.42	12.52	1.711E-03	.0656	2.1[illegible]E-03	.0808	2.140E-03	.0823	1.101E-03
1	2277(175)	14.52	13.62	1.634E-03	.0629	2.020E-03	.0775	2.057E-03	.0789	1.056E-03
5	3940(175)	14.52	13.62	1.634E-03	.0629	2.020E-03	.0775	2.057E-03	.0789	1.056E-03
1	2278(175)	15.59	14.69	1.572E-03	.0605	1.956E-03	.0	1.991E-03	.0766	1.017E-03
5	3937(175)	15.59	14.69	1.572E-03	.0605	1.956E-03	.0	1.991E-03	.0766	1.017E-03
1	2279(175)	16.67	15.77	1.523E-03	.0586	1.876E-03	.0720	1.912E-03	.0733	9.813E-04
5	3938(175)	16.67	15.77	1.523E-03	.0586	1.876E-03	.0720	1.912E-03	.0733	9.813E-04
1	2280(175)	17.75	16.85	1.474E-03	.0565	1.817E-03	.0697	1.850E-03	.0709	9.496E-04
5	3939(175)	17.75	16.85	1.474E-03	.0565	1.817E-03	.0697	1.850E-03	.0709	9.496E-04
		18.35		MODEL HAS LEFT CENTERLINE						
1	2281(175)	18.82	17.92	1.429E-03	.0548	1.761E-03	.0675	1.793E-03	.0688	9.205E-04
5	3940(175)	18.82	17.92	1.429E-03	.0548	1.761E-03	.0675	1.793E-03	.0688	9.205E-04
1	2282(175)	19.90	19.00	1.386E-03	.0532	1.711E-03	.0656	1.742E-03	.0668	8.940E-04
5	3941(175)	19.90	19.00	1.386E-03	.0532	1.711E-03	.0656	1.742E-03	.0668	8.940E-04
1	2283(175)	21.00	20.10	1.346E-03	.0517	1.663E-03	.0638	1.693E-03	.0649	8.692E-04
5	3942(175)	21.00	20.10	1.346E-03	.0517	1.663E-03	.0638	1.693E-03	.0649	8.692E-04

1538

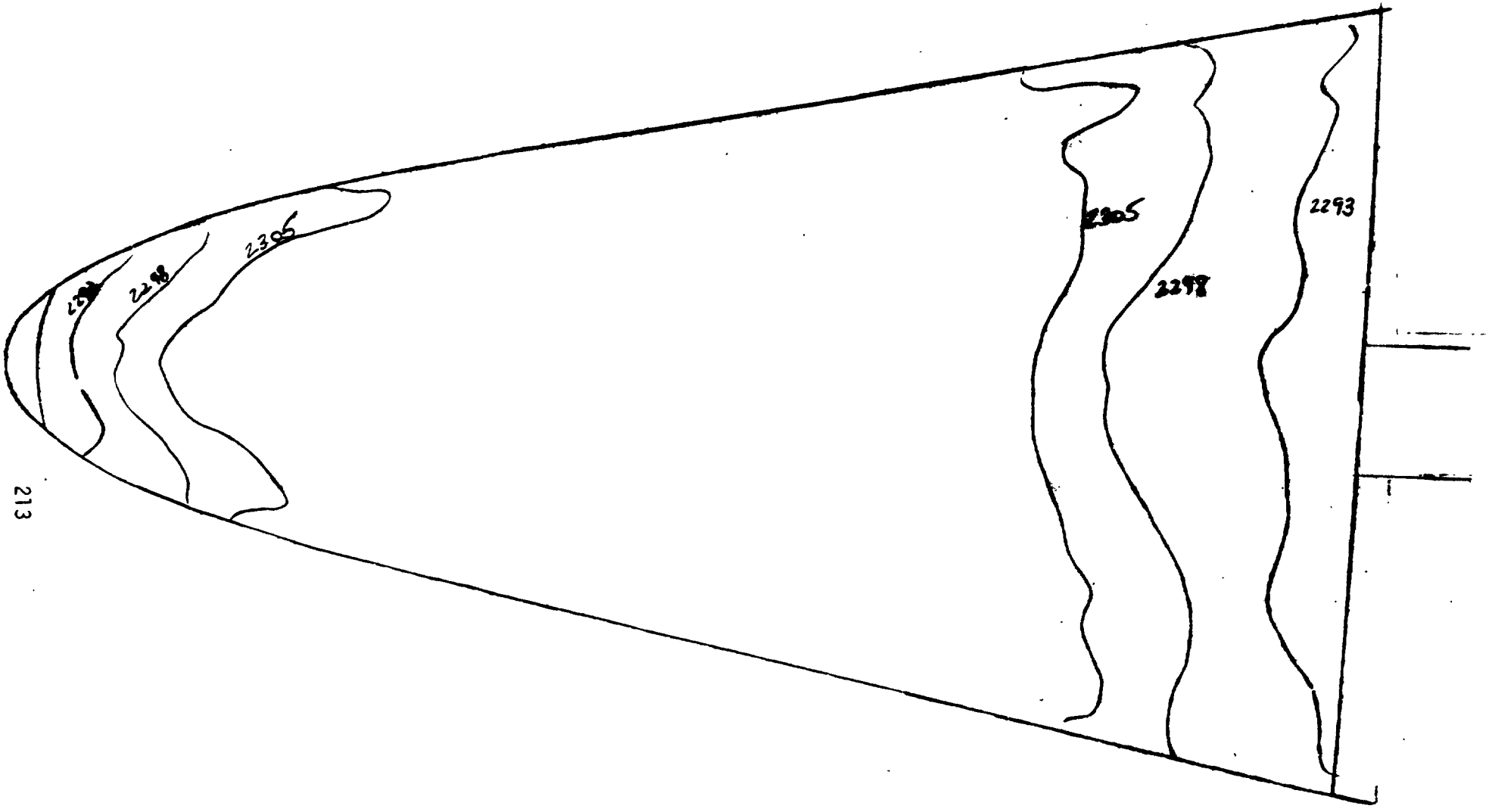
Fx 48

670 PSIA
870°F

$\alpha = 30°$

$T_{PC} = 300°F$

2288℄



CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	MED
48 P	MCL-HWSI INTERFACE GAP	.020	.040	.089					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREDEND	ROLL-MODEL	YAW
7.99	670.5	1320	30.00	0.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SIREF (W= .040 FT)
95.9	.044	3.094	3833	6.041E-05	7.717E-06	3.610E 06	2.865E-02	1.551E-02

CAPSULE	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAR)	TRAN(TO)	BETA(TO)
10F(I)	1538					
SIDE(S)	1603	300	83	.0568	2.794E-01	3.2069E-01
SG						

	PIC NO	TIME	RELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2285(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
S	3546(303)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	2286(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	3545(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.58								
I	2287(300)	2.63	1.74	1.310E-02	.4816	1.775E-02	.6196	1.714E-02	.5982	7.338E-03
S	3546(300)	2.63	1.74	1.310E-02	.4816	1.775E-02	.6196	1.714E-02	.5982	7.338E-03
I	2288(300)	3.68	2.79	1.090E-02	.3904	1.402E-02	.4896	1.354E-02	.4725	5.795E-03
S	3547(300)	3.68	2.79	1.090E-02	.3904	1.402E-02	.4896	1.354E-02	.4725	5.795E-03
SG		3.93								
I	2289(300)	4.78	3.89	9.229E-03	.3221	1.167E-02	.4145	1.146E-02	.4001	4.908E-03
S	3548(300)	4.78	3.89	9.229E-03	.3221	1.167E-02	.4145	1.146E-02	.4001	4.908E-03
I	2290(300)	5.86	4.97	8.139E-03	.2952	1.051E-02	.3669	1.015E-02	.3542	4.344E-03
S	3549(300)	5.86	4.97	8.139E-03	.2952	1.051E-02	.3669	1.015E-02	.3542	4.344E-03
I	2291(300)	6.93	6.05	7.417E-03	.2585	9.529E-03	.3326	9.203E-03	.3211	3.939E-03
S	3550(300)	6.93	6.05	7.417E-03	.2585	9.529E-03	.3326	9.203E-03	.3211	3.939E-03
I	2292(300)	8.01	7.12	6.625E-03	.2352	8.780E-03	.3065	8.477E-03	.2959	3.629E-03
S	3551(300)	8.01	7.12	6.625E-03	.2352	8.780E-03	.3065	8.477E-03	.2959	3.629E-03
I	2293(300)	9.09	8.20	6.301E-03	.2220	8.184E-03	.2857	7.901E-03	.2758	3.383E-03
S	3552(300)	9.09	8.20	6.301E-03	.2220	8.184E-03	.2857	7.901E-03	.2758	3.383E-03
I	2294(300)	10.16	9.28	5.991E-03	.2083	7.694E-03	.2686	7.424E-03	.2593	3.180E-03
S	3553(300)	10.16	9.28	5.991E-03	.2083	7.694E-03	.2686	7.424E-03	.2593	3.180E-03
I	2295(300)	11.24	10.35	5.681E-03	.1976	7.283E-03	.2542	7.032E-03	.2454	3.011E-03
S	3554(300)	11.24	10.35	5.681E-03	.1976	7.283E-03	.2542	7.032E-03	.2454	3.011E-03
I	2296(300)	12.34	11.45	5.342E-03	.1979	6.924E-03	.2417	6.685E-03	.2334	2.862E-03
S	3555(300)	12.34	11.45	5.342E-03	.1979	6.924E-03	.2417	6.685E-03	.2334	2.862E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HED
48	0	HCC-HRSI INTERFACE GAP	.020	.040	.080					

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PR-HEND	ROLL-MODEL	YAW
7.99	470.5	1320	30.00	-.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH= .040 FT)	STREF (RH= .040 FT)
95.5	.009	3.094	3833	8.041E-05	7.117E-08	3.010E 04	2.045E-02	1.551E-32

LAMERA	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACM)	TRAN(TO)	BETA(TO)
10P(I)	1538					
SIDE(S)	1603	300	83	.0568	2.794E-01	3.2069E-01
56						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2297(300)	13.39	12.51	5.515E-03	.1798	6.627E-03	.2313	6.398E-03	.2233	2.739E-03
S	3556(300)	13.39	12.51	5.515E-03	.1798	6.627E-03	.2313	6.398E-03	.2233	2.739E-03
I	2298(300)	14.47	13.55	5.543E-03	.1725	6.359E-03	.2220	6.134E-03	.2143	2.629E-03
S	3557(300)	14.47	13.55	5.543E-03	.1725	6.359E-03	.2220	6.134E-03	.2143	2.629E-03
I	2299(300)	15.54	14.64	5.705E-03	.1661	6.121E-03	.2137	5.910E-03	.2063	2.530E-03
S	3558(300)	15.54	14.64	5.705E-03	.1661	6.121E-03	.2137	5.910E-03	.2063	2.530E-03
I	2300(300)	16.62	15.73	5.592E-03	.1603	5.908E-03	.2062	5.704E-03	.1991	2.442E-03
S	3559(300)	16.62	15.73	5.592E-03	.1603	5.908E-03	.2062	5.704E-03	.1991	2.442E-03
I	2301(300)	17.72	16.84	5.439E-03	.1556	5.712E-03	.1996	5.514E-03	.1925	2.361E-03
S	3560(300)	17.72	16.84	5.439E-03	.1556	5.712E-03	.1996	5.514E-03	.1925	2.361E-03
I	2302(300)	18.77	17.89	5.376E-03	.1503	5.541E-03	.1934	5.350E-03	.1867	2.290E-03
S	3561(300)	18.77	17.89	5.376E-03	.1503	5.541E-03	.1934	5.350E-03	.1867	2.290E-03
I	2303(300)	19.87	18.99	5.180E-03	.1459	5.378E-03	.1877	5.192E-03	.1812	2.223E-03
S	3562(300)	19.87	18.99	5.180E-03	.1459	5.378E-03	.1877	5.192E-03	.1812	2.223E-03
I	2304(300)	20.95	21.04	5.057E-03	.1419	5.232E-03	.1826	5.051E-03	.1763	2.163E-03
S	3563(300)	20.95	21.04	5.057E-03	.1419	5.232E-03	.1826	5.051E-03	.1763	2.163E-03
I	2305(300)	22.03	21.14	3.962E-03	.1383	5.097E-03	.1779	4.921E-03	.1718	2.107E-03
S	3564(300)	22.03	21.14	3.962E-03	.1383	5.097E-03	.1779	4.921E-03	.1718	2.107E-03
I	2306(300)	23.10	22.22	3.865E-03	.1349	4.972E-03	.1735	4.800E-03	.1676	2.055E-03
S	3565(300)	23.10	22.22	3.865E-03	.1349	4.972E-03	.1735	4.800E-03	.1676	2.055E-03
I	2307(300)	24.20	23.32	3.772E-03	.1317	4.853E-03	.1694	4.686E-03	.1635	2.006E-03
S	3566(300)	24.20	23.32	3.772E-03	.1317	4.853E-03	.1694	4.686E-03	.1635	2.006E-03
		25.18		MODEL HAS LEFT CENTERLINE						
I	2308(300)	25.25	24.37	3.692E-03	.1288	4.747E-03	.1657	4.583E-03	.1600	1.962E-03
S	3567(300)	25.25	24.37	3.692E-03	.1288	4.747E-03	.1657	4.583E-03	.1600	1.962E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REU
4R	P	HCC-HRSI INTERFACE GAP	.020	.040	.089					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PRE-END	ROLL-MODEL	YAW
7.99	670.5	1320	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .340 FT)	STREF (R= .040 FT)
95.9	.080	3.394	3033	6.061E-05	7.717E-08	3.019E 06	2.465E-02	1.551E-02

CAPPA (DEG)	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	THAW(TO)	HETA(TO)
10F(T)	1530					
STEP(S)	1603	300	83	.0564	2.794E-01	3.2069E-01
50						

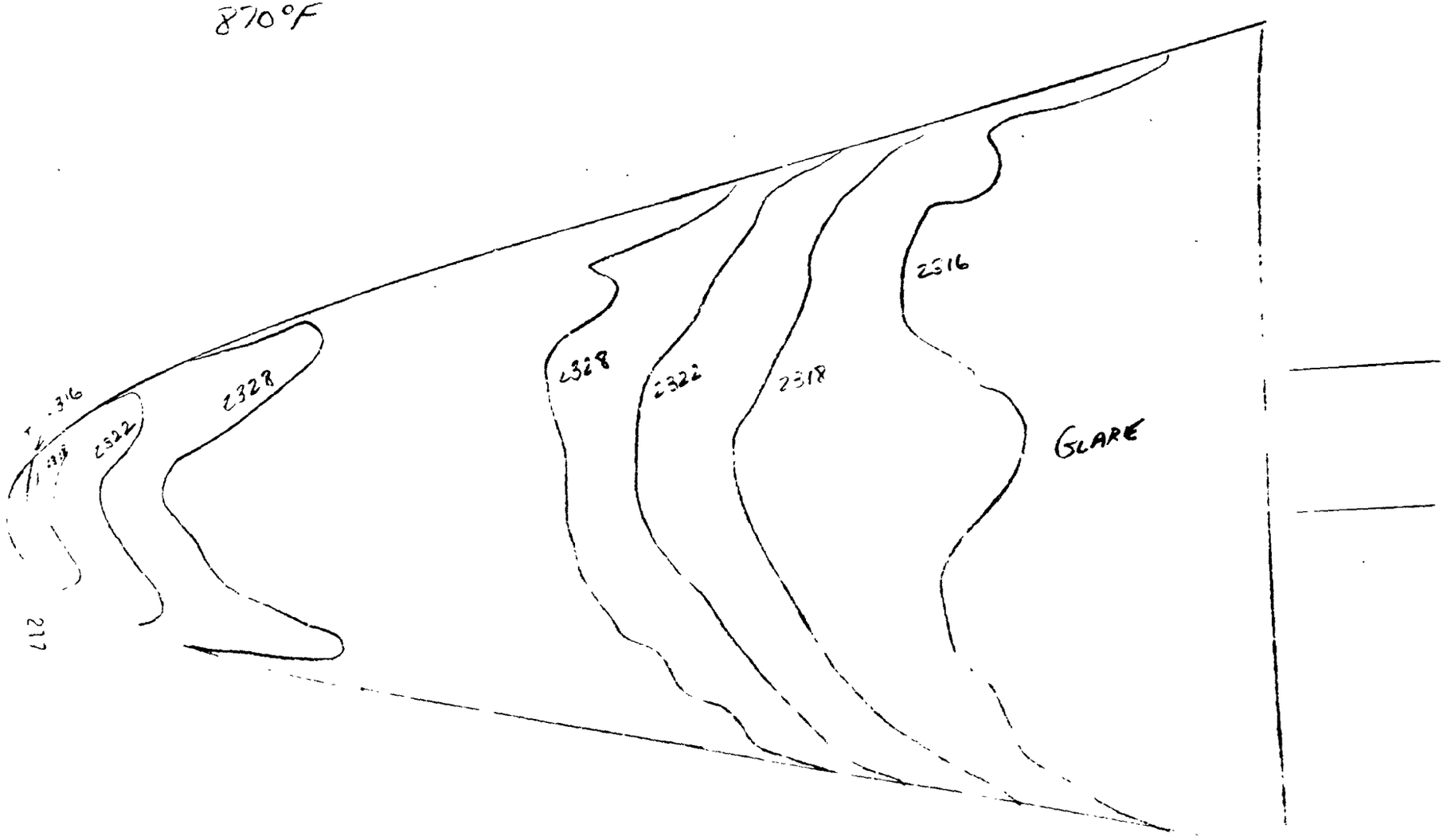
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91C)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	230+(400)	26.36	25.67	3.6.3E-03	.1263	4.6.6E-03	.1621	4.683E-03	.1565	1.914E-03
5	255+(400)	26.26	25.67	3.6.9E-03	.1260	4.6.6E-03	.1621	4.6.1E-03	.1565	1.914E-03
1	231+(400)	27.03	26.56	3.535E-03	.1234	4.5.8E-03	.1588	4.391E-03	.1533	1.8.0E-03
5	255+(400)	27.03	26.56	3.535E-03	.123.	4.5.8E-03	.15.8	4.391E-03	.1533	1.8.0E-03

C

G558 T_c=500°F α = 40

G049 670 PSIA
870°F

2315 ℄



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VAT4-428 VON KARMAN GAS DYNAMICS FACILITY
40 INCH HYPERSONIC TUNNEL A

WRCUP CONFIG *** MODEL DESCRIPTION *** GAP LOCATION/SIZE T-IP LOCATION/SIZE HEB HEW

49	P	HCC-HRSI INTERFACE GAP			A/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
					.020	.040	.080				

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-MEHENE	ROLL-MODEL	YAW
7.99	471.9	1322	39.99	-1.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF	SIHEF
96.0	.099	3.171	1838	4.065E-05	7.727E-08	3.018E 06	2.840E-02 (IN .040 FT)	1.551E-02 (IN .040 FT)

LAPENA	MOLI NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACA*)	TRAR(TO)	BETA(TO)
TOP(T)	1538					
SIDE(S)	1603	300	83	.0548	2.727E-01	3.1966E-01
BG						

	PIC NO	TIME (SECS)		H(T0)	H(T0)/HREF	H(.010)	H(.010)/HREF	H(.030)	H(.030)/HREF	H(.034T0)/HREF	ST(T0)
1	2312(400)	.05		MODEL HAS NOT REACHED CENTERLINE							
2	3271(400)	.05		MODEL HAS NOT REACHED CENTERLINE							
1	2313(400)	1.03		MODEL HAS NOT REACHED CENTERLINE							
2	3272(400)	1.03		MODEL HAS NOT REACHED CENTERLINE							
IN-PCT TIME =			1.58								
1	2314(400)	2.00	1.72	1.3[illegible]E-02	.4429	1.7[illegible]2E-02	.6211	1.[illegible]2E-02	.5454	7.354E-03	
2	3273(400)	2.00	1.72	1.3[illegible]E-02	.4429	1.7[illegible]2E-02	.6211	1.[illegible]2E-02	.5454	7.354E-03	
1	2315(400)	3.00	2.76	1.[illegible]E-02	.3787	1.397E-02	.4970	1.2[illegible]E-02	.4637	5.768E-03	
2	3274(400)	3.00	2.76	1.[illegible]E-02	.3787	1.397E-02	.4970	1.2[illegible]E-02	.4637	5.768E-03	
BG			3.91								
1	2316(400)	4.76	3.87	9.2[illegible]E-03	.3217	1.187E-02	.4138	1.042[illegible]E-02	.3770	4.901E-03	
2	3275(400)	4.76	3.87	9.2[illegible]E-03	.3217	1.187E-02	.4138	1.0[illegible]E-02	.3770	4.901E-03	
1	2317(400)	5.83	4.95	8.1[illegible]E-03	.2465	1.050E-02	.3663	9.567E-03	.3335	4.335E-03	
2	3276(400)	5.83	4.95	8.1[illegible]E-03	.2465	1.050E-02	.3663	9.567E-03	.3335	4.335E-03	
1	2318(400)	6.93	6.05	7.3[illegible]E-03	.2574	9.495E-03	.3310	8.652E-03	.3016	3.921E-03	
2	3277(400)	6.93	6.05	7.3[illegible]E-03	.2574	9.495E-03	.3310	8.652E-03	.3016	3.921E-03	
1	2319(400)	8.01	7.12	6.[illegible]E-03	.2371	8.7[illegible]E-03	.3050	7.9[illegible]E-03	.2779	3.612E-03	
2	3278(400)	8.01	7.12	6.[illegible]E-03	.2371	8.7[illegible]E-03	.3050	7.9[illegible]E-03	.2779	3.612E-03	
1	2320(400)	9.09	8.21	5.3[illegible]E-03	.2210	8.154E-03	.2863	7.431E-03	.2590	3.367E-03	
2	3279(400)	9.09	8.21	5.3[illegible]E-03	.2210	8.154E-03	.2863	7.431E-03	.2590	3.367E-03	
1	2321(400)	10.18	9.29	5.[illegible]E-03	.2174	7.667E-03	.2673	6.9[illegible]E-03	.2435	3.166E-03	
2	3280(400)	10.18	9.29	5.[illegible]E-03	.2174	7.667E-03	.2673	6.9[illegible]E-03	.2435	3.166E-03	
1	2322(400)	11.26	10.36	5.[illegible]E-03	.1997	7.257E-03	.2530	6.613E-03	.2304	2.997E-03	
2	3281(400)	11.26	10.36	5.[illegible]E-03	.1997	7.257E-03	.2530	6.613E-03	.2305	2.997E-03	
1	2323(400)	12.31	11.43	5.3[illegible]E-03	.1872	6.907E-03	.2408	6.2[illegible]E-03	.2196	2.852E-03	
2	3282(400)	12.31	11.43	5.3[illegible]E-03	.1872	6.907E-03	.2408	6.2[illegible]E-03	.2196	2.852E-03	

WHOLE CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REF	NEU
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
99	F	FCL-HNSI INTERFACE GAP	.020	.049	.080				

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	671.09	1322	39.99	-0.06	30.00	0	0

T-INF (DEG R)	T-TOP (DEG R)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	REF/FT (1/FT)	HREF (HR .963 FT)	SINEF (WR .040 FT)
96.0	.099	3.11	3936	5.1455E-05	7.72ME-06	3.0106 06	2.4691-02	1.5519-02

CAMERA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE FOOT (FHUCACAA)	TRAN(TO)	BETA(TO)
10F(1)	1538					
5JE(5)	3F03	300	43	.0544	2.1H7E-01	3.1960E-01
50						

	FIG. NO	TIME (SECS)		M(10)	M(10)/M-REF	M(.910)	M(.910)/M-REF	M(.93010)	M(.93010)/MREF	ST(TO)
1	232(1002)	13.29	13.51	5.134E-03	.1770	6.033E-03	.2302	6.017E-03	.2647	2.726E-03
5	3[illegible](1003)	13.39	13.51	5.1[illegible]E-03	.1749	6.013E-03	.2292	6.017E-03	.2643	2.726E-03
1	232(1003)	14.49	13.61	4.962E-03	.1714	6.330E-03	.2207	5.7[illegible]E-03	.2611	2.616E-03
5	3[illegible](1003)	14.49	13.61	4.962E-03	.1714	6.330E-03	.2207	5.7[illegible]E-03	.2611	2.616E-03
1	232(1003)	15.57	14.68	4.7[illegible]E-03	.1652	6.046E-03	.2126	5.553E-03	.1936	2.516E-03
5	3[illegible](1003)	15.57	14.69	4.7[illegible]E-03	.1652	6.046E-03	.2126	5.553E-03	.1936	2.516E-03
1	232(1003)	16.64	15.74	4.576E-03	.1596	5.8[illegible]2E-03	.2050	5.3[illegible]E-03	.1868	2.429E-03
5	3[illegible](1003)	16.64	15.74	4.576E-03	.1596	5.8[illegible]2E-03	.2050	5.3[illegible]E-03	.1868	2.429E-03
1	232(1003)	17.72	16.84	4.425E-03	.1543	5.591E-03	.1966	5.1[illegible]E-03	.1608	2.350E-03
5	3[illegible](1003)	17.72	16.84	4.425E-03	.1543	5.591E-03	.1966	5.1[illegible]E-03	.1608	2.350E-03
		17.87		MODEL WAS LEFT CENTERLINE						
1	232(1003)	19.80	17.91	4.2[illegible]E-03	.1445	5.517E-03	.1923	5.027E-03	.1753	2.278E-03
5	3[illegible](1003)	19.80	17.91	4.2[illegible]E-03	.1445	5.517E-03	.1923	5.027E-03	.1753	2.278E-03
1	232(1003)	19.90	19.01	4.1[illegible]E-03	.1452	5.355E-03	.1867	4.8[illegible]E-03	.1701	2.211E-03
5	3[illegible](1003)	19.90	19.01	4.1[illegible]E-03	.1452	5.355E-03	.1867	4.8[illegible]E-03	.1701	2.211E-03
1	232(1003)	20.97	20.05	4.0[illegible]E-03	.1412	5.210E-03	.1816	4.767E-03	.1655	2.151E-03
5	3[illegible](1003)	20.97	20.05	4.0[illegible]E-03	.1412	5.210E-03	.1816	4.767E-03	.1655	2.151E-03

1538

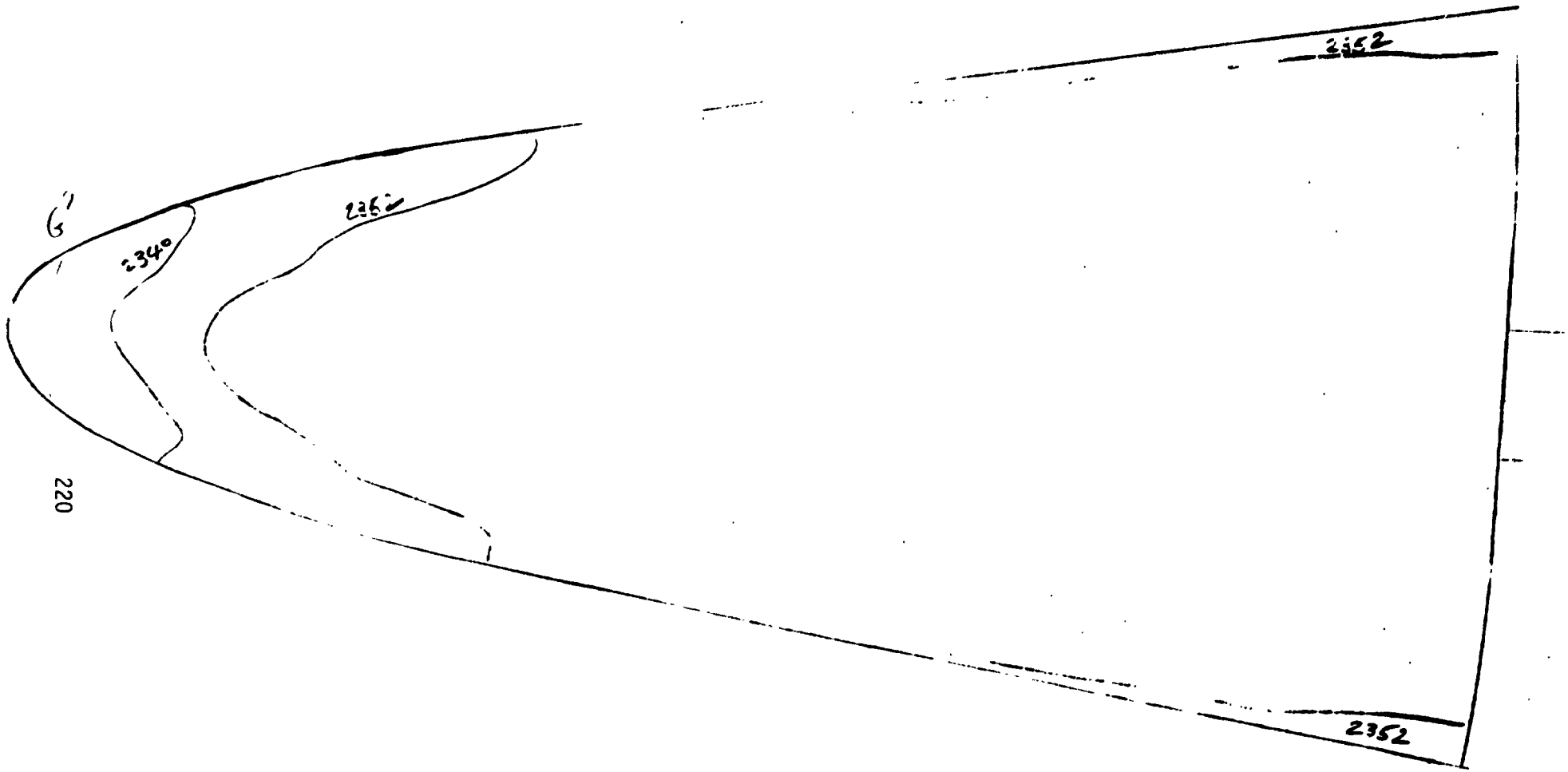
GP 50 $T_{AC} = 250°F$

$\alpha = 40$

2356 ℄

670 PSIA

870°F



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V41H-H2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	RED
50	B	HCC-HRSI INTERFACE GAP	.020	.000	.000					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	470.8	1324	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	STREF (RE .040 FT)
96.1	.059	3.096	3034	6.045E-05	7.760E-06	2.594E 06	2.447E-02	1.556E-02

CAMERA	HOLD TO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HRCACAA)	TRAN(TO)	HETA(TO)
10F(F)	1538					
51F(S)	1603	250	80	.9551	2.0944E-01	2.2206E-01
56						

PIC NO	TIME (ELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.8920)	H(.8920)/HREF	ST(TO)
1 2333(250)	.48	MODEL HAS NOT REACHED CENTERLINE						
5 3592(250)	.48	MODEL HAS NOT REACHED CENTERLINE						
1 2334(250)	1.55	MODEL HAS NOT REACHED CENTERLINE						
5 3593(250)	1.55	MODEL HAS NOT REACHED CENTERLINE						
(NEXT TIME = 1.55)								
1 2335(250)	2.60 1.72	9.339E-03	.3266	1.170E-02	.4114	1.204E-02	.4199	4.995E-03
5 3594(250)	2.60 1.72	9.339E-03	.3266	1.170E-02	.4114	1.204E-02	.4199	4.995E-03
5 3594(250)	4.64 .75	7.339E-03	.2569	9.294E-03	.3256	9.460E-03	.3312	3.916E-03
1 2336(250)	3.70 3.42	7.339E-03	.2569	9.294E-03	.3252	9.396E-03	.3276	3.899E-03
56	3.43							
1 2337(250)	4.78 3.90	6.215E-03	.2198	7.833E-03	.2733	7.995E-03	.2788	3.317E-03
5 3595(250)	4.78 3.90	6.215E-03	.2164	7.843E-03	.2732	7.995E-03	.2788	3.317E-03
1 2338(250)	5.85 4.97	5.515E-03	.1913	6.935E-03	.2418	7.077E-03	.2468	2.936E-03
5 3596(250)	5.85 4.97	5.515E-03	.1913	6.935E-03	.2418	7.077E-03	.2468	2.936E-03
1 2339(250)	6.96 6.07	4.975E-03	.1734	6.274E-03	.2188	6.403E-03	.2233	2.656E-03
5 3597(250)	6.96 6.07	4.975E-03	.1734	6.274E-03	.2184	6.403E-03	.2233	2.656E-03
1 2340(250)	8.03 7.15	4.525E-03	.1500	5.782E-03	.2017	5.901E-03	.2058	2.449E-03
5 3598(250)	8.03 7.15	4.525E-03	.1433	5.782E-03	.2017	5.901E-03	.2058	2.449E-03
1 2341(250)	9.11 8.23	4.277E-03	.1492	5.391E-03	.1880	5.502E-03	.1919	2.283E-03
5 3599(250)	9.11 8.23	4.277E-03	.1492	5.391E-03	.1880	5.502E-03	.1919	2.283E-03
1 2342(250)	10.19 9.39	4.022E-03	.1403	5.068E-03	.1768	5.175E-03	.1806	2.146E-03
5 3600(250)	10.19 9.39	4.022E-03	.1403	5.068E-03	.1768	5.175E-03	.1806	2.146E-03
1 2343(250)	11.26 10.39	3.824E-03	.1324	4.799E-03	.1676	4.899E-03	.1708	2.032E-03
5 3602(250)	11.26 10.39	3.824E-03	.1324	4.799E-03	.1676	4.899E-03	.1708	2.032E-03
1 2344(250)	12.34 11.45	3.624E-03	.1264	4.545E-03	.1593	4.662E-03	.1628	1.934E-03
5 3603(250)	12.34 11.45	3.624E-03	.1264	4.545E-03	.1593	4.662E-03	.1628	1.934E-03

VAIM-H2A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	A/L	DIA.	REF	REQ
50	B	HCC-HASI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREMEND	ROLL-MODEL	YAW
7.99	470.8	1324	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	SIREF (RE .040 FT)
96.1	.054	3.694	3839	6.045E-05	7.743E-09	2.594E 04	2.467E-02	1.554E-02

CAPERA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAPA)	THAW(TO)	HETA(TO)
10P(1)	1538					
SIDE(S)	1603	250	RP	.0551	2.043E-01	2.2292E-01
56						

	PTC NO	TINF	DELTINF	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	236(250)	13.42	12.53	3.465E-03	.1209	4.367E-03	.1523	4.457E-03	.1555	1.849E-03
2	420(250)	13.42	12.53	3.465E-03	.1209	4.367E-03	.1523	4.457E-03	.1555	1.849E-03
1	236(250)	14.49	13.61	3.325E-03	.1160	4.191E-03	.1462	4.278E-03	.1492	1.775E-03
2	420(250)	14.49	13.61	3.325E-03	.1160	4.191E-03	.1462	4.278E-03	.1492	1.775E-03
1	236(250)	15.59	14.71	3.198E-03	.1116	4.031E-03	.1406	4.116E-03	.1435	1.707E-03
2	420(250)	15.59	14.71	3.198E-03	.1116	4.031E-03	.1406	4.116E-03	.1435	1.707E-03
1	236(250)	16.67	15.78	3.067E-03	.1077	3.891E-03	.1357	3.972E-03	.1385	1.648E-03
2	420(250)	16.67	15.78	3.067E-03	.1077	3.891E-03	.1357	3.972E-03	.1385	1.648E-03
1	236(250)	17.75	16.86	2.975E-03	.1042	3.765E-03	.1313	3.843E-03	.1340	1.594E-03
2	420(250)	17.75	16.86	2.975E-03	.1042	3.765E-03	.1313	3.843E-03	.1340	1.594E-03
1	235(250)	18.82	17.94	2.895E-03	.1010	3.650E-03	.1273	3.726E-03	.1299	1.546E-03
2	420(250)	18.82	17.94	2.895E-03	.1010	3.650E-03	.1273	3.726E-03	.1299	1.546E-03
1	235(250)	19.90	19.01	2.813E-03	.0981	3.544E-03	.1237	3.614E-03	.1262	1.501E-03
2	420(250)	19.90	19.01	2.813E-03	.0981	3.544E-03	.1237	3.614E-03	.1262	1.501E-03
		20.72		MODEL HAS LEFT CENTERLINE						
1	235(250)	21.60	20.11	2.735E-03	.0954	3.447E-03	.1202	3.514E-03	.1227	1.460E-03
2	420(250)	21.60	20.11	2.735E-03	.0954	3.447E-03	.1202	3.514E-03	.1227	1.460E-03
1	235(250)	22.68	21.19	2.655E-03	.0929	3.350E-03	.1171	3.428E-03	.1196	1.422E-03
2	420(250)	22.68	21.19	2.655E-03	.0929	3.350E-03	.1171	3.428E-03	.1196	1.422E-03
1	235(250)	23.15	22.27	2.594E-03	.0907	3.274E-03	.1143	3.344E-03	.1166	1.387E-03
1	235(250)	23.18	22.25	2.594E-03	.0906	3.274E-03	.1142	3.344E-03	.1166	1.386E-03

GROUP 51 MELT LINES NOT READABLE

NASA-HI OH 54

AEDC(SPO.INC.) ARNOLD AFS.TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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V41H-82A

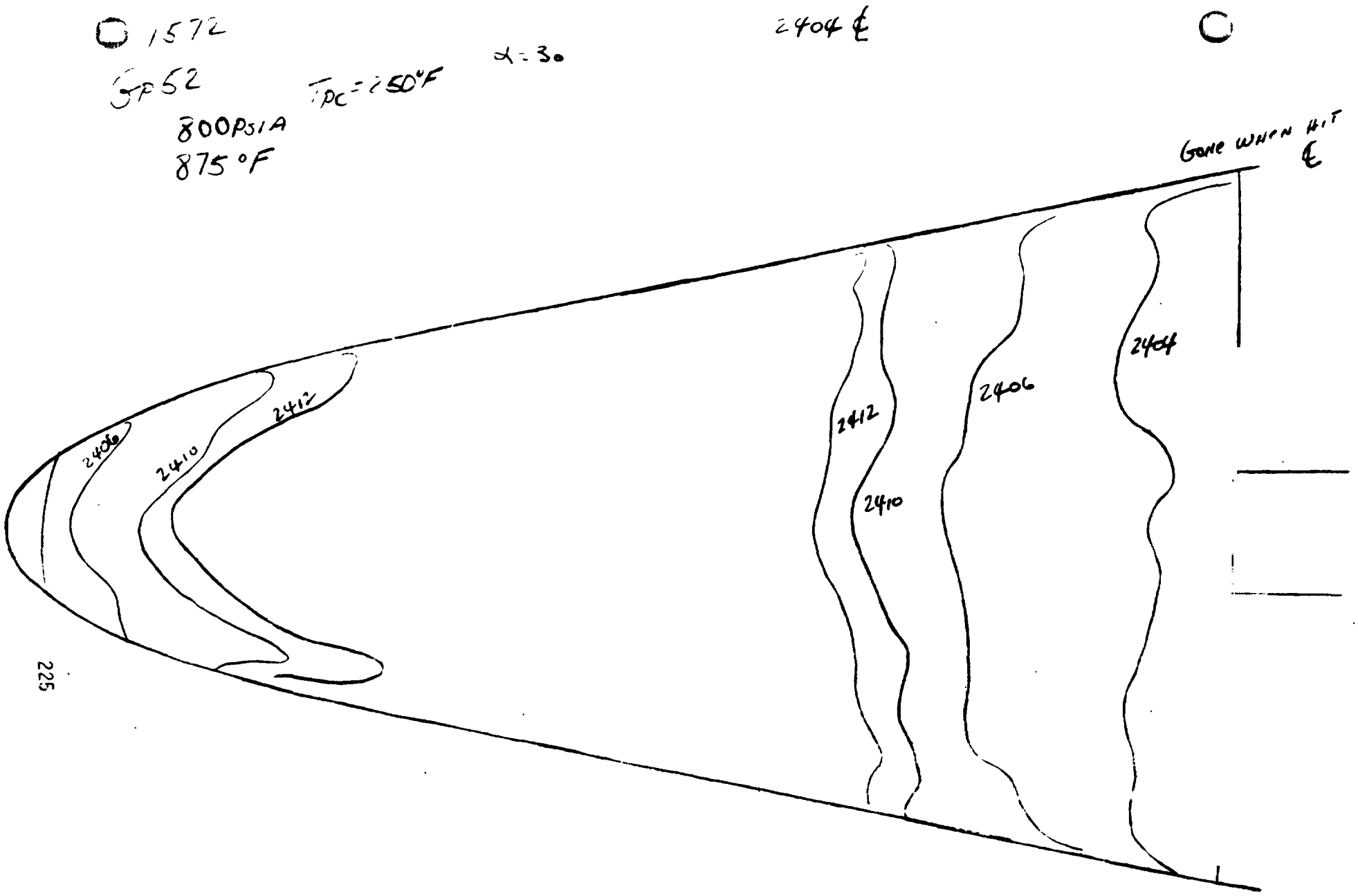
GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	HEA	HEW
51	0	HCC-HNSI INTERFACE GAP	.020	.060	.080					

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
8.00	759.1	1326	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (KSEC)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .060 FT)	STREF (RE .060 FT)
96.1	.002	3.057	3003	7.165E-05	7.739E-07	3.564E 06	9.122E-02	1.429E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAA)	TRAN(TO)	HETA(TO)
IOP(T)	1572					
SLEE(S)	1E04	300	46	.0568	2.741E-01	3.157E-01
SG						

	PIC NO	TIME (SECTIME		H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912(TO)	H(.912(TO)/HREF	ST(TO)
S	0051(300)	.05		MODEL HAS NOT REACHED CENTERLINE						
S	0052(300)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.61							
S	0054(300)	2.55	1.65	.3.5E-03	.4657	1.791E-02	.5734	1.730E-02	.5562	6.272E-03
S	0055(300)	1.60	2.70	1.0[illegible]E-02	.3443	1.400E-02	.4448	1.353E-02	.4333	4.906E-03
SG			3.85							
S	0055(300)	[illegible]	3.75	9.225E-03	.2954	1.164E-02	.3794	1.144E-02	.3665	4.149E-03
S	0056(300)	[illegible]	[illegible]	[illegible]	.2613	1.048E-02	.3358	1.012E-02	.3242	3.669E-03
S	0057(300)	[illegible]	[illegible]	7.377E-03	.2363	9.475E-03	.3035	9.152E-03	.2932	3.318E-03
S	0058(300)	7.68	[illegible]	6.7[illegible]E-03	.2174	8.715E-03	.2792	8.41[illegible]E-03	.2696	3.052E-03
S	0059(300)	[illegible]	[illegible]	6.325E-03	.2026	8.125E-03	.2603	7.867E-03	.2519	2.845E-03
S	0060(300)	10.01	[illegible]	5.915E-03	.1903	7.630E-03	.2444	7.369E-03	.2361	2.672E-03
S	0061(300)	11.06	1.15	5.625E-03	.1802	7.225E-03	.2314	6.978E-03	.2235	2.530E-03
S	[illegible]	12.11	11.21	5.3[illegible]E-03	.1715	[illegible]	.2203	6.663E-03	.2132	2.408E-03
S	[illegible]	13.19	1.26	5.115E-03	.1639	6.570E-03	.2105	6.365E-03	.2033	2.300E-03
S	[illegible]	14.24	13.34	4.9[illegible]E-03	.1573	6.305E-03	.2020	6.090E-03	.1951	2.208E-03
S	[illegible]	15.29	14.39	4.7[illegible]E-03	.1514	6.071E-03	.1945	5.864E-03	.1878	2.126E-03
S	[illegible]	16.27	15.47	4.55[illegible]E-03	.1461	5.85[illegible]E-03	.1876	5.650E-03	.1812	2.051E-03
		16.72		MODEL HAS LEFT CENTERLINE						
S	[illegible]	17.72	16.52	[illegible]E-03	.1413	5.667E-03	.1815	5.473E-03	.1753	1.984E-03
S	[illegible]	18.50	17.60	[illegible]E-03	.1364	5.491E-03	.1759	5.303E-03	.1699	1.923E-03
S	[illegible]	19.55	18.65	[illegible]E-03	.1330	5.334E-03	.1709	5.151E-03	.1650	1.864E-03


1572
Gp 52
800 PSIA
875 °F
T_{pc} = 250°F
α = 30
2404 ℄
Gone when hit ℄
2406
2410
2412
2412
2410
2406
2404

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V41M-R2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	PER	NEW
52	0	HCL-HNSI INTERFACE GAP	.320	.040	.090					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEAD	ROLL-MODEL	YAW
8.00	800.6	1330	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	SIREF (HR .040 FT)
98.0	.082	3.674	3048	7.140E-05	7.759E-08	3.541E 06	3.126E-02	1.030E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACA)	THAW(TO)	BETA(TO)
IOF(I)	1572					
SIOF(S)	1604	250	81	.0591	2.102E-01	2.2954E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2601(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
S	6071(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	2602(250)	1.08		MODEL HAS NOT REACHED CENTERLINE						
S	6072(250)	1.08		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.00								
I	2603(250)	2.65	1.75	5.550E-03	.3155	1.202E-02	.3844	1.164E-02	.3725	4.304E-03
S	6073(250)	2.65	1.75	5.550E-03	.3155	1.202E-02	.3844	1.164E-02	.3725	4.304E-03
I	2604(250)	3.70	2.80	7.552E-03	.2416	9.502E-03	.3040	9.206E-03	.2945	3.403E-03
S	6074(250)	3.70	2.80	7.552E-03	.2416	9.502E-03	.3040	9.206E-03	.2945	3.403E-03
SG			1.95							
I	2605(250)	4.81	3.91	8.399E-03	.2047	8.052E-03	.2576	7.801E-03	.2496	2.884E-03
S	6075(250)	4.81	3.91	8.399E-03	.2047	8.052E-03	.2576	7.801E-03	.2496	2.884E-03
S	6076(250)	5.66	4.96	8.830E-03	.1817	7.147E-03	.2285	6.925E-03	.2215	2.560E-03
I	2606(250)	5.68	4.98	8.880E-03	.1813	7.124E-03	.2281	6.900E-03	.2210	2.553E-03
I	2607(250)	6.56	6.04	9.125E-03	.1666	6.485E-03	.2068	6.284E-03	.2004	2.315E-03
S	6077(250)	6.56	6.04	9.125E-03	.1666	6.485E-03	.2068	6.284E-03	.2004	2.315E-03
I	2608(250)	8.03	7.13	9.735E-03	.1515	5.955E-03	.1906	5.772E-03	.1847	2.134E-03
S	6078(250)	8.03	7.13	9.735E-03	.1515	5.955E-03	.1906	5.772E-03	.1847	2.134E-03
I	2609(250)	9.11	8.21	9.414E-03	.1412	5.554E-03	.1777	5.381E-03	.1721	1.989E-03
S	6079(250)	9.11	8.21	9.414E-03	.1412	5.554E-03	.1777	5.381E-03	.1721	1.989E-03
I	2610(250)	10.19	9.29	9.150E-03	.1324	5.222E-03	.1670	5.061E-03	.1619	1.870E-03
S	6080(250)	10.19	9.29	9.150E-03	.1324	5.222E-03	.1670	5.061E-03	.1619	1.870E-03
I	2611(250)	11.26	10.36	8.929E-03	.1257	4.943E-03	.1581	4.794E-03	.1532	1.770E-03
S	6081(250)	11.26	10.36	8.929E-03	.1257	4.943E-03	.1581	4.794E-03	.1532	1.770E-03
I	2612(250)	12.34	11.44	8.729E-03	.1195	4.709E-03	.1505	4.559E-03	.1458	1.685E-03
S	6082(250)	12.34	11.44	8.729E-03	.1195	4.709E-03	.1504	4.559E-03	.1457	1.683E-03

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

V61H-824

WHCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	WEB	WEU
52	A	RCC-HRSI INTERFACE GAP	.970	.040	.080					

MACH NO	PO(PSIA)	TO(DEG K)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
4.00	800.6	1330	29.99	.01	30.00	0	0

T-INF (DEG K)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
96.6	.042	3.676	3040	7.140E-05	7.754E-08	3.401E 06	3.120E-02	1.030E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (BTU/CAL)	THAW(TO)	HETA(TO)
10F(T)	1572					
51DF(S)	1604	250	91	.0551	2.142E-01	2.2950E-01
5G						

	PIC NO	TIME DELTIME	H(0)	H(T0)/HREF	H(.9T0)	H(.9T0)/HREF	H(.912T0)	H(.912T0)/HREF	ST(T0)
		13.12	MODEL WAS LEFT CENTERLINE						
1	2613(250)	13.42 12.52	3.576E-03	.1144	4.498E-03	.1439	4.354E-03	.1394	1.611E-03
5	5613(250)	13.42 12.52	3.576E-03	.1144	4.498E-03	.1439	4.354E-03	.1394	1.611E-03
1	2614(250)	14.49 13.53	3.431E-03	.1097	4.316E-03	.1381	4.182E-03	.1338	1.546E-03
5	5614(250)	14.49 13.53	3.431E-03	.1097	4.316E-03	.1381	4.182E-03	.1338	1.546E-03

AAZ = 16459 ROLLZ = 17036
POZ FROM RANGE = 0

AAZ = 16468 ROLLZ = 17036
POZ FROM RANGE = 0

572

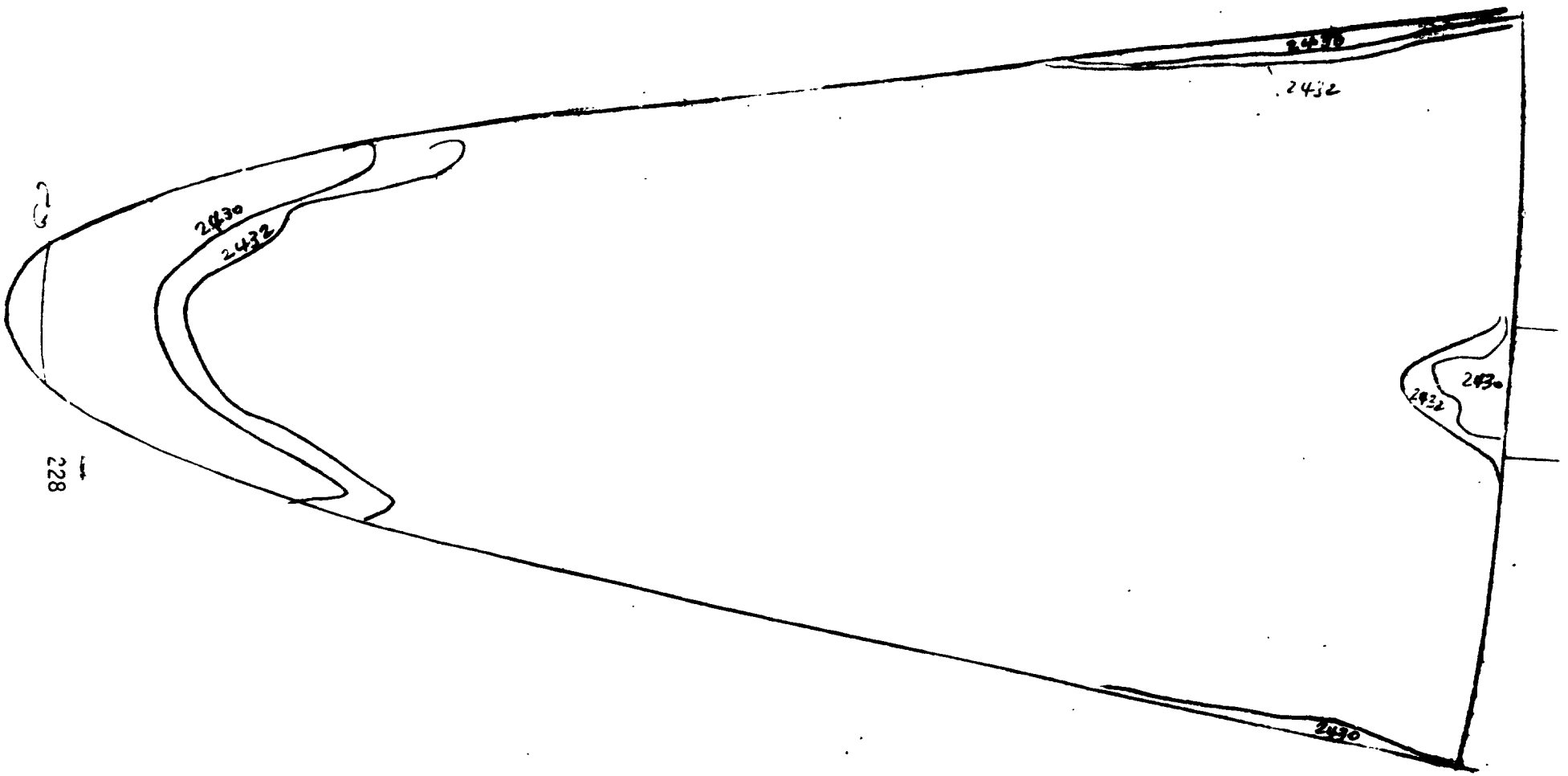
GP53 T_R = 250°F

800 PSIA

875 °F

2419 ℄

$\alpha = 2.$



V414-828

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HEW
53	0	RCC-HRSI INTERFACE GAP	.020	.040	.080					

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRESENO	ROLL-MODEL	YAW
8.00	799.7	1324	10.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	SREF
98.3	.082	3.470	3846	7.140E-05	7.750E-08	2.543E 06	3.124E-02	1.430E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOQAQAR)	TBAR(TO)	HETA(TO)
10F(T)	1572					
51L4(S)	1604	250	89	.0591	2.120E-01	2.274E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.992TO)	H(.992TO)/HREF	ST(TO)
1	2406(250)	.45		MODEL HAS NOT REACHED CENTERLINE						
5	4084(250)	.45		MODEL HAS NOT REACHED CENTERLINE						
1	2411(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
5	4087(250)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.58								
5	4088(250)	2.58	1.69	9.594E-03	.3086	1.213E-02	.3883	1.236E-02	.3962	4.344E-03
1	2415(250)	2.60	1.72	9.553E-03	.3062	1.204E-02	.3856	1.224E-02	.3933	4.312E-03
1	2414(250)	3.65	2.77	7.532E-03	.2411	9.462E-03	.3034	9.677E-03	.3098	3.396E-03
5	4014(250)	3.65	2.77	7.532E-03	.2411	9.462E-03	.3034	9.677E-03	.3098	3.396E-03
56		3.69								
5	4096(250)	4.73	3.85	6.392E-03	.2046	8.046E-03	.2576	8.212E-03	.2629	2.882E-03
1	2420(250)	4.76	3.87	6.371E-03	.2040	8.020E-03	.2568	8.185E-03	.2621	2.873E-03
1	2421(250)	5.81	4.93	5.650E-03	.1809	7.112E-03	.2277	7.254E-03	.2324	2.548E-03
5	4091(250)	5.81	4.93	5.650E-03	.1809	7.112E-03	.2277	7.254E-03	.2324	2.548E-03
1	2422(250)	6.88	6.00	5.118E-03	.1639	6.443E-03	.2063	6.575E-03	.2105	2.308E-03
5	4092(250)	6.88	6.00	5.118E-03	.1639	6.443E-03	.2063	6.575E-03	.2105	2.308E-03
1	2423(250)	7.98	7.10	4.704E-03	.1506	5.922E-03	.1896	6.044E-03	.1935	2.121E-03
5	4093(250)	7.98	7.10	4.704E-03	.1506	5.922E-03	.1896	6.044E-03	.1935	2.121E-03
1	2424(250)	9.04	8.15	4.385E-03	.1405	5.527E-03	.1769	5.641E-03	.1806	1.980E-03
5	4095(250)	9.04	8.15	4.384E-03	.1403	5.518E-03	.1767	5.632E-03	.1803	1.977E-03
1	2425(250)	10.11	9.23	4.166E-03	.1321	5.195E-03	.1663	5.301E-03	.1697	1.861E-03
5	4095(250)	10.11	9.23	4.166E-03	.1321	5.195E-03	.1663	5.301E-03	.1697	1.861E-03
1	2426(250)	11.19	10.31	3.935E-03	.1250	4.916E-03	.1574	5.017E-03	.1606	1.761E-03
5	4096(250)	11.19	10.31	3.935E-03	.1250	4.916E-03	.1574	5.017E-03	.1606	1.761E-03
1	2427(250)	12.26	11.39	3.718E-03	.1180	4.678E-03	.1497	4.774E-03	.1528	1.675E-03
5	4097(250)	12.26	11.39	3.718E-03	.1180	4.678E-03	.1497	4.774E-03	.1528	1.675E-03

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V61H-M2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL M

GNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	MEA	MEW
51	8	NCC-M-51 INTERFACE GAP	.020	.040	.040					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	799.7	1328	14.00	14.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	SIREF (RE .040 FT)
96.3	.042	3.670	3040	7.140E-05	7.750E-08	3.543E 06	3.124E-02	1.030E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG)	SQUARE ROOT (BHCACXR)	TRAN(TO)	BETA(TO)
10F(T)	1572					
SICE(S)	1604	250	83	.0591	2.120E-01	2.276E-01
SG						

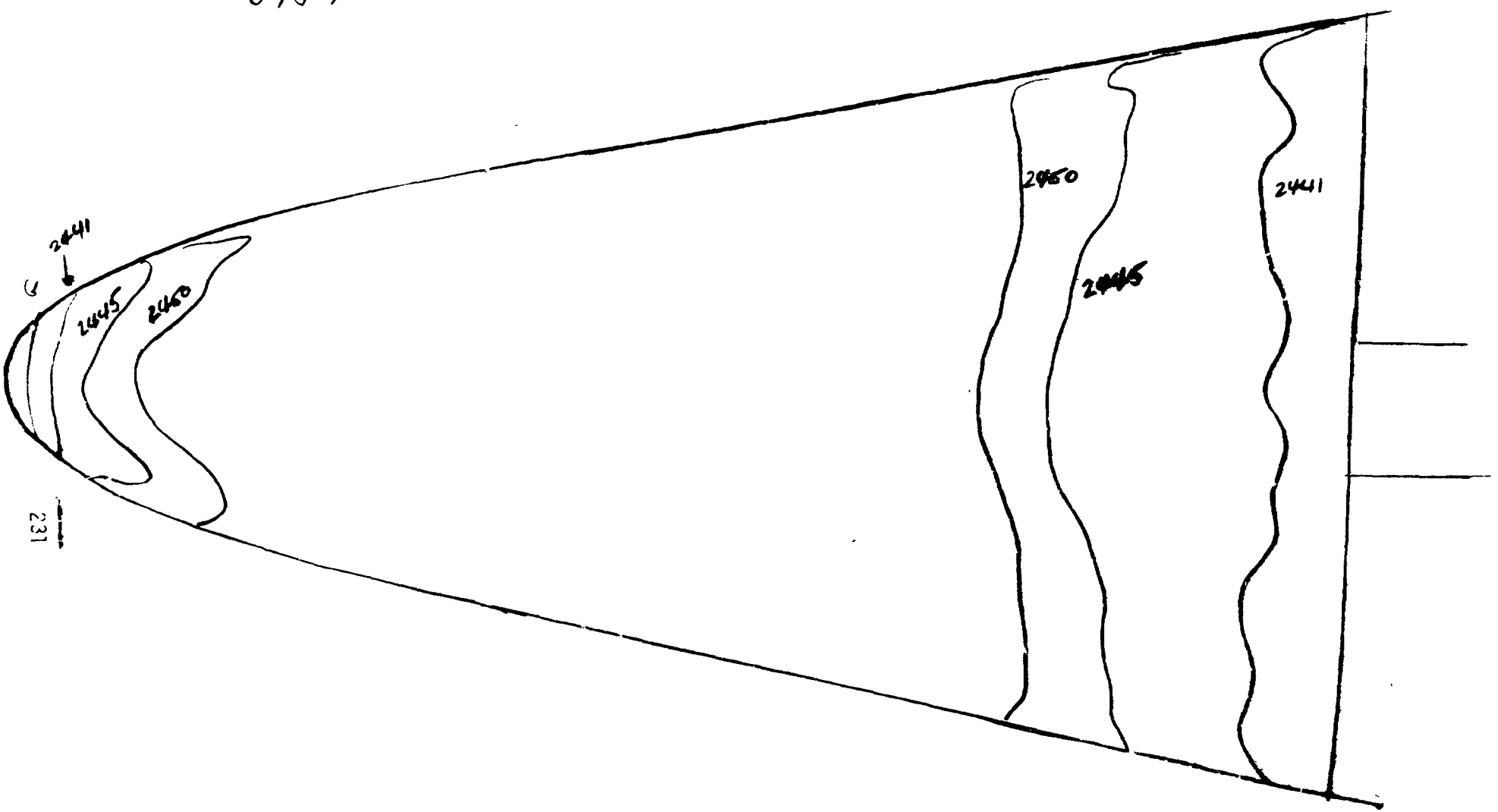
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	2622(250)	13.34	12.45	3.552E-03	.1137	4.471E-03	.1431	4.563E-03	.1461	1.601E-03
5	4095(250)	13.34	12.46	3.552E-03	.1137	4.471E-03	.1431	4.563E-03	.1461	1.601E-03
1	2625(250)	14.42	13.53	3.407E-03	.1091	4.289E-03	.1373	4.378E-03	.1401	1.536E-03
5	4096(250)	14.42	13.53	3.407E-03	.1091	4.289E-03	.1373	4.378E-03	.1401	1.536E-03
1	2631(250)	15.49	14.61	3.219E-03	.1050	4.128E-03	.1322	4.213E-03	.1349	1.479E-03
5	4101(250)	15.49	14.61	3.219E-03	.1050	4.128E-03	.1322	4.213E-03	.1349	1.479E-03
5	4101(250)	16.54	15.66	3.167E-03	.1016	3.987E-03	.1277	4.069E-03	.1303	1.429E-03
1	2631(250)	16.57	15.69	3.165E-03	.1013	3.966E-03	.1274	4.066E-03	.1302	1.427E-03
		16.79		MODEL HAS LEFT CENTERLINE						
1	2632(250)	17.65	16.74	3.062E-03	.0980	3.854E-03	.1234	3.933E-03	.1259	1.381E-03
5	4102(250)	17.65	16.74	3.062E-03	.0980	3.854E-03	.1234	3.933E-03	.1259	1.381E-03
1	2633(250)	18.72	17.84	2.968E-03	.0950	3.736E-03	.1196	3.813E-03	.1221	1.338E-03
5	4103(250)	18.72	17.84	2.968E-03	.0950	3.736E-03	.1196	3.813E-03	.1221	1.338E-03
1	2634(250)	19.80	18.91	2.862E-03	.0923	3.628E-03	.1162	3.703E-03	.1185	1.300E-03
5	4104(250)	19.80	18.91	2.862E-03	.0923	3.628E-03	.1162	3.703E-03	.1185	1.300E-03

572 $T_{pc} = 500°F$ $\alpha = 30°$ 2439 ℄

GP 54

800 PSIA

875°F



GROUP CONFIG *** MODEL DESCRIPTION ***

GROUP	CONFIG	MODEL DESCRIPTION
56	A	ACC-HMSI INTERFACE GAP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	NEW
.020	.048	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
8.00	801.1	1330	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF	SREF
96.3	.042	3.676	3844	7.146E-05	7.757E-06	3.545E 06	3.127E-02 (NR .063 FT)	1.438E-03 (NR .060 FT)

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (NRHUACAR)	TRAN(TO)	BETA(TO)
10F(1)	1572					
51LE(5)	1604	300	83	.0548	2.759E-01	3.1943E-01
56						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.910)	M(.910)/MREF	M(.912TO)	M(.912TO)/MREF	ST(TO)
1	2636(300)	.00		MODEL HAS NOT REACHED CENTERLINE						
5	4104(300)	.00		MODEL HAS NOT REACHED CENTERLINE						
1	2637(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
5	4107(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.00							
5	4109(300)	2.00	1.71	1.373E-02	.4330	1.761E-02	.5493	1.701E-02	.5661	4.164E-03
1	2638(300)	2.03	1.73	1.383E-02	.4359	1.749E-02	.5572	1.688E-02	.5601	4.119E-03
1	2639(300)	3.00	2.74	1.075E-02	.3637	1.379E-02	.4410	1.336E-02	.4259	4.026E-03
5	4109(300)	3.00	2.70	1.075E-02	.3637	1.379E-02	.4410	1.332E-02	.4259	4.026E-03
56			3.93							
5	4110(300)	4.76	3.86	9.124E-03	.2918	1.171E-02	.3746	1.131E-02	.3617	4.097E-03
1	2640(300)	4.78	3.88	9.044E-03	.2908	1.167E-02	.3732	1.127E-02	.3605	4.084E-03
1	2641(300)	5.66	4.96	8.047E-03	.2573	1.033E-02	.3302	9.97E-03	.3190	3.614E-03
5	4111(300)	5.66	4.94	8.047E-03	.2573	1.033E-02	.3302	9.97E-03	.3190	3.614E-03
1	2642(300)	6.53	5.83	7.249E-03	.2333	9.359E-03	.2993	9.040E-03	.2891	3.276E-03
5	4112(300)	6.53	5.83	7.249E-03	.2333	9.359E-03	.2993	9.040E-03	.2891	3.276E-03
1	2643(300)	7.58	7.08	6.731E-03	.2153	8.637E-03	.2762	8.343E-03	.2668	3.023E-03
5	4113(300)	8.01	7.11	6.719E-03	.2149	8.622E-03	.2757	8.328E-03	.2663	3.014E-03
1	2644(300)	9.66	8.19	6.272E-03	.2006	8.047E-03	.2574	7.773E-03	.2486	2.816E-03
5	4114(300)	9.66	8.14	6.272E-03	.2006	8.047E-03	.2574	7.773E-03	.2486	2.816E-03
1	2645(300)	10.14	9.24	5.855E-03	.1885	7.564E-03	.2419	7.300E-03	.2337	2.647E-03
5	4115(300)	10.14	9.24	5.855E-03	.1885	7.564E-03	.2419	7.300E-03	.2337	2.647E-03
1	2646(300)	11.21	10.31	5.579E-03	.1796	7.194E-03	.2300	6.915E-03	.2211	2.505E-03
5	4116(300)	11.21	10.31	5.579E-03	.1796	7.194E-03	.2300	6.915E-03	[illegible]	2.505E-03
1	2647(300)	12.29	11.39	5.349E-03	.1698	6.812E-03	.2179	6.580E-03	.21[illegible]	2.384E-03
5	4117(300)	12.29	11.39	5.349E-03	.1698	6.812E-03	.2179	6.580E-03	.2104	2.384E-03

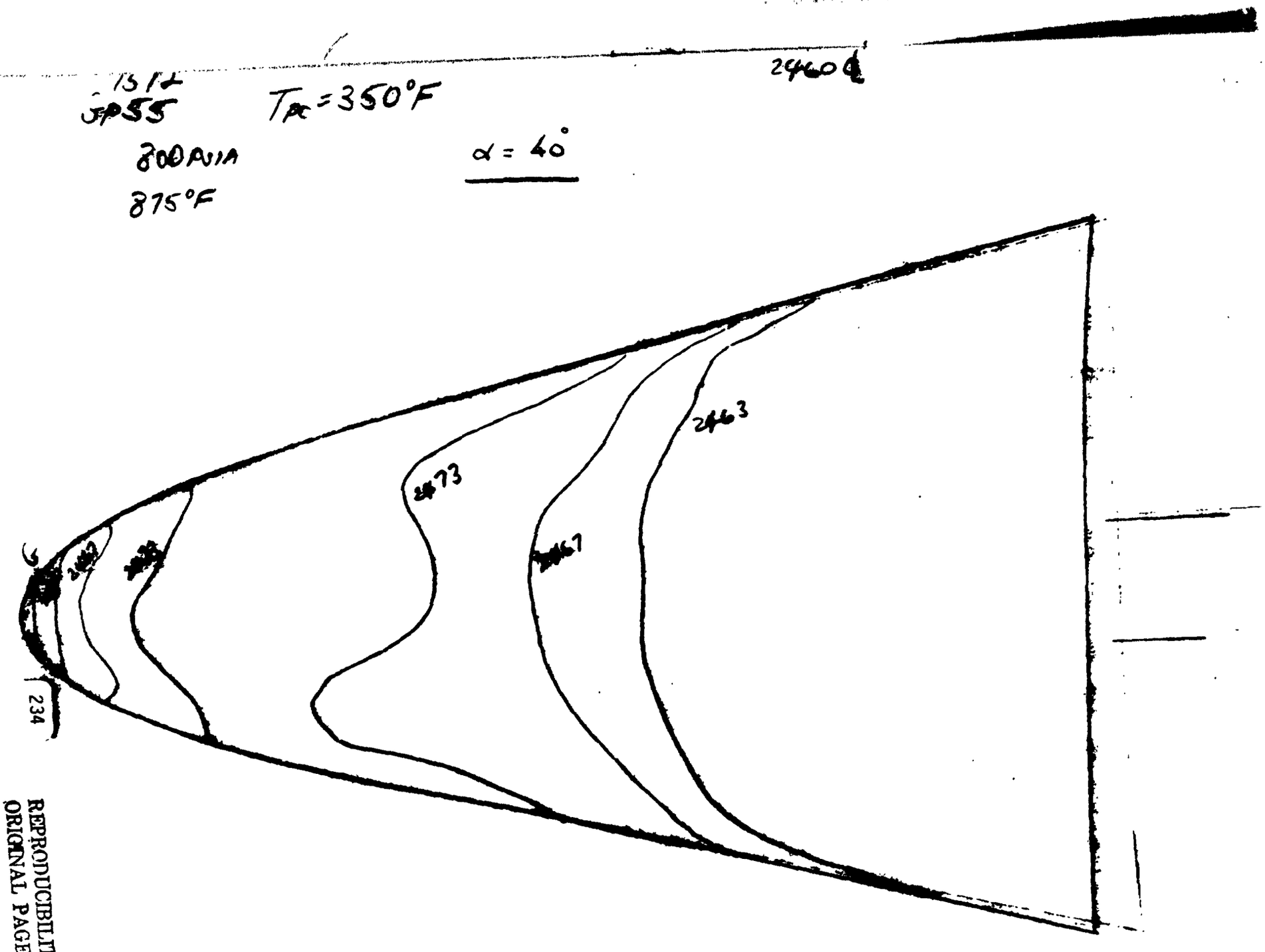
GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	MEA	MED
54	8	HCC-HASI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREMEND	ROLL-MODEL	YAW
8.00	801.1	1330	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (FT/SEC)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (NO .060 FT)	STREF (NO .060 FT)
96.3	.092	3.978	3848	7.146E-05	7.757E-08	3.545E 06	3.127E-02	1.083E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	TRAR(TO)	BETA(TO)
104(1)	1572					
SILF(S)	1404	300	83	.0564	2.759E-01	3.1563E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2445(300)	13.37	12.47	5.074E-03	.1623	6.511E-03	.2082	6.264E-03	.2011	2.279E-03
S	4116(300)	13.37	12.47	5.074E-03	.1623	6.511E-03	.2082	6.264E-03	.2011	2.279E-03
I	2449(300)	14.44	13.54	4.859E-03	.1557	6.247E-03	.1998	6.034E-03	.1930	2.186E-03
S	4119(300)	14.44	13.54	4.859E-03	.1557	6.247E-03	.1998	6.034E-03	.1930	2.186E-03
I	2450(300)	15.52	14.62	4.528E-03	.1449	6.013E-03	.1923	5.808E-03	.1857	2.104E-03
S	4120(300)	15.52	14.62	4.528E-03	.1449	6.013E-03	.1923	5.808E-03	.1857	2.104E-03
I	2451(300)	16.59	15.69	4.522E-03	.1446	5.803E-03	.1856	5.605E-03	.1793	2.031E-03
S	4121(300)	16.59	15.69	4.522E-03	.1446	5.803E-03	.1856	5.605E-03	.1793	2.031E-03
I	2452(300)	17.67	16.77	4.375E-03	.1399	5.814E-03	.1795	5.622E-03	.1734	1.965E-03
S	4122(300)	17.67	16.77	4.375E-03	.1399	5.814E-03	.1795	5.622E-03	.1734	1.965E-03
I	2453(300)	18.75	17.85	4.241E-03	.1356	5.442E-03	.1740	5.250E-03	.1681	1.905E-03
S	4123(300)	18.75	17.85	4.241E-03	.1356	5.442E-03	.1740	5.250E-03	.1681	1.905E-03
		18.82		MODEL HAS LEFT CENTERLINE						
I	2454(300)	19.82	18.92	4.113E-03	.1317	5.245E-03	.1680	5.105E-03	.1633	1.850E-03
S	4124(300)	19.82	18.92	4.113E-03	.1317	5.245E-03	.1680	5.105E-03	.1633	1.850E-03
I	2455(300)	20.90	20.00	4.006E-03	.1281	5.141E-03	.1644	4.966E-03	.1588	1.799E-03
S	4125(300)	20.90	20.00	4.006E-03	.1281	5.141E-03	.1644	4.966E-03	.1588	1.799E-03



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	REQ
55	B	RCC-HRSI INTERFACE GAP	.020	.040	.080					

MACH NO	PC (PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
8.00	800.0	1331	39.97	-0.97	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	SIREF (RE .060 FT)
96.6	.082	3.671	3049	7.131E-05	7.763E-08	3.536E 06	3.175E-02	1.031E-02

LAMERA (DEG F)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RNUACAR)	TBAR(TO)	RETA(TO)
	3572					
SIDE(S)	1806	350	48	.0579	3.368E-01	6.995E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
1	2657(350)	.65		MODEL HAS NOT REACHED CENTERLINE						
5	4127(350)	.65		MODEL HAS NOT REACHED CENTERLINE						
1	2659(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
5	4129(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.55								
5	4129(350)	2.58	1.03	1.822E-02	.5831	2.345E-02	.7446	2.104E-02	.6728	8.176E-03
1	2659(350)	2.68	1.12	1.805E-02	.5789	2.378E-02	.7609	2.146E-02	.6872	8.116E-03
1	2660(350)	3.65	2.09	1.425E-02	.4559	1.873E-02	.5992	1.691E-02	.5412	6.393E-03
5	4130(350)	3.65	2.09	1.425E-02	.4559	1.873E-02	.5992	1.691E-02	.5412	6.393E-03
5G		3.88								
1	2661(350)	4.73	3.17	1.209E-02	.3869	1.569E-02	.5025	1.435E-02	.4593	5.425E-03
5	4131(350)	4.73	3.17	1.209E-02	.3869	1.569E-02	.5025	1.435E-02	.4593	5.425E-03
1	2662(350)	5.81	4.25	1.069E-02	.3420	1.405E-02	.4495	1.264E-02	.4060	4.795E-03
5	4132(350)	5.81	4.25	1.069E-02	.3420	1.405E-02	.4495	1.264E-02	.4060	4.795E-03
1	2663(350)	6.88	5.32	9.681E-03	.3098	1.272E-02	.4072	1.149E-02	.3678	4.344E-03
5	4133(350)	6.88	5.32	9.681E-03	.3098	1.272E-02	.4072	1.149E-02	.3678	4.344E-03
1	2664(350)	7.96	6.40	8.915E-03	.2853	1.172E-02	.3749	1.058E-02	.3386	4.000E-03
5	4134(350)	7.96	6.40	8.915E-03	.2853	1.172E-02	.3749	1.058E-02	.3386	4.000E-03
1	2665(350)	9.04	7.48	8.345E-03	.2658	1.092E-02	.3493	9.859E-03	.3155	3.726E-03
5	4135(350)	9.04	7.48	8.345E-03	.2658	1.092E-02	.3493	9.859E-03	.3155	3.726E-03
1	2666(350)	10.11	8.23	7.806E-03	.2494	1.026E-02	.3283	9.268E-03	.2965	3.502E-03
5	4136(350)	10.11	8.23	7.806E-03	.2494	1.026E-02	.3283	9.268E-03	.2965	3.502E-03
1	2667(350)	11.19	10.3	7.387E-03	.2364	9.708E-03	.3107	8.769E-03	.2806	3.314E-03
5	4137(350)	11.19	10.3	7.387E-03	.2364	9.708E-03	.3107	8.769E-03	.2806	3.314E-03
5	4138(350)	12.26	11.38	7.029E-03	.2249	9.238E-03	.2956	8.344E-03	.2670	3.153E-03
1	2668(350)	12.69	11.43	7.021E-03	.2247	9.226E-03	.2953	8.335E-03	.2667	3.150E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REB	HED
55	8	HCC-HHSI INTERFACE GAP	.020	.040	.080					

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
6.00	800.0	1331	39.97	-4.97	30.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	STHEF (RE .040 FT)
96.6	.042	3.671	3044	7.131E-05	7.763E-06	3.536E 06	3.125E-02	1.631E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACKR)	TRAR(TO)	RETA(TO)
IOR(T)	1372					
SICE(S)	1604	350	80	.0579	3.348E-01	6.0450E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
I	2455(350)	13.34	12.44	5.718E-03	.2150	8.830E-03	.2825	7.975E-03	.2552	3.014E-03
S	4137(350)	13.34	12.44	5.718E-03	.2150	8.830E-03	.2825	7.975E-03	.2552	3.014E-03
I	2470(350)	14.42	13.53	5.446E-03	.2063	8.471E-03	.2711	7.657E-03	.2448	2.892E-03
S	4140(350)	14.42	13.53	5.446E-03	.2063	8.471E-03	.2711	7.657E-03	.2448	2.892E-03
I	2471(350)	15.52	14.63	5.158E-03	.1953	8.146E-03	.2607	7.354E-03	.2354	2.781E-03
S	4141(350)	15.52	14.63	5.158E-03	.1953	8.146E-03	.2607	7.354E-03	.2354	2.781E-03
I	2472(350)	16.59	15.71	5.452E-03	.1914	7.852E-03	.2516	7.101E-03	.2272	2.684E-03
S	4142(350)	16.59	15.71	5.452E-03	.1914	7.852E-03	.2516	7.101E-03	.2272	2.684E-03
		16.67		MODEL HAS LEFT CENTERLINE						
I	2473(350)	17.67	16.79	5.775E-03	.1952	7.066E-03	.2434	6.871E-03	.2198	2.596E-03
S	4143(350)	17.67	16.79	5.775E-03	.1952	7.066E-03	.2434	6.871E-03	.2198	2.596E-03
I	2474(350)	18.75	17.86	5.810E-03	.1745	7.373E-03	.2359	6.660E-03	.2131	2.517E-03
S	4144(350)	18.75	17.86	5.810E-03	.1745	7.373E-03	.2359	6.660E-03	.2131	2.517E-03

1572 OD 56

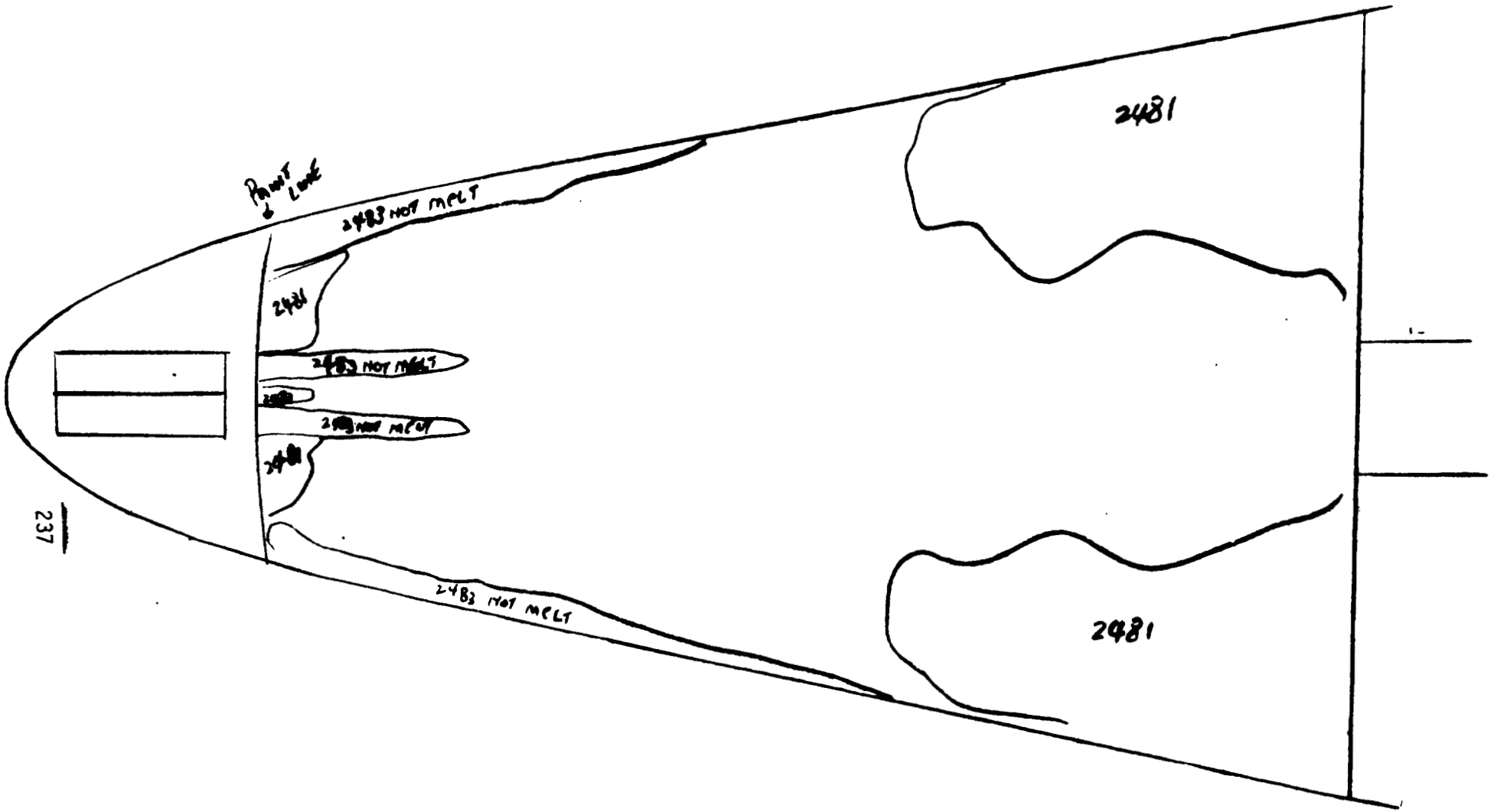
555 PSIA

860°F

T_{PC} = 250°F

$\alpha = 3°$

24M ℄



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V614-924 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	NEU
56	5	PHOTOCHROMIC W/SIMULATED LANDING GEAR DOOR								

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.49	453.4	1315	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	SREF
95.5	.057	2.554	3027	5.015E-05	7.692E-08	2.491E 06	2.601E-02 (HR .040 FT)	1.706E-02 (HR .040 FT)

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHOCXA)	TRAR(TO)	HETA(TO)
IDF(I)	1572					
SIDF(S)	1604	250	74	.0581	2.232E-01	2.4144E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
S	4146(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	2476(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
S	4147(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
I	2477(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
IN-EFF TIME =			1.00							
I	2478(250)	2.03	1.73	1.012E-02	.3490	1.277E-02	.4907	1.238E-02	.4762	6.528E-03
S	4148(250)	2.03	1.73	1.012E-02	.3490	1.277E-02	.4907	1.238E-02	.4762	6.528E-03
I	2479(250)	3.08	2.78	7.979E-03	.3067	1.017E-02	.3910	9.769E-03	.3756	5.148E-03
S	4149(250)	3.08	2.78	7.979E-03	.3067	1.017E-02	.3910	9.769E-03	.3756	5.148E-03
56			3.93							
I	2480(250)	4.61	3.51	7.109E-03	.2731	8.966E-03	.3446	8.681E-03	.3337	4.584E-03
S	4150(250)	4.61	3.51	7.109E-03	.2731	8.966E-03	.3446	8.681E-03	.3337	4.584E-03
I	2481(250)	5.63	4.53	6.249E-03	.2402	7.846E-03	.3021	7.635E-03	.2935	4.032E-03
S	4151(250)	5.63	4.53	6.249E-03	.2402	7.846E-03	.3021	7.635E-03	.2935	4.032E-03
I	2482(250)	6.61	5.61	5.615E-03	.2160	7.087E-03	.2725	6.866E-03	.2639	3.624E-03
S	4152(250)	6.61	5.61	5.615E-03	.2160	7.087E-03	.2725	6.866E-03	.2639	3.624E-03
		7.31		MODEL HAS LEFT CENTERLINE						
I	2483(250)	7.58	6.58	5.145E-03	.1978	6.492E-03	.2496	6.287E-03	.2417	3.320E-03
S	4153(250)	7.58	6.58	5.145E-03	.1978	6.492E-03	.2496	6.287E-03	.2417	3.320E-03
S	4154(250)	8.66	7.76	4.775E-03	.1836	6.025E-03	.2316	5.835E-03	.2243	3.081E-03
I	2484(250)	9.68	7.73	4.675E-03	.1833	6.015E-03	.2312	5.825E-03	.2239	3.076E-03
I	2485(250)	9.74	8.96	4.675E-03	.1720	5.646E-03	.2170	5.466E-03	.2102	2.887E-03
S	4155(250)	9.74	8.96	4.675E-03	.1720	5.646E-03	.2170	5.466E-03	.2102	2.887E-03
I	2486(250)	10.81	9.91	4.225E-03	.1624	5.331E-03	.2049	5.163E-03	.1985	2.726E-03
S	4156(250)	10.81	9.91	4.225E-03	.1624	5.331E-03	.2049	5.163E-03	.1985	2.726E-03
I	2487(250)	11.89	10.99	4.013E-03	.1543	5.063E-03	.1946	4.903E-03	.1885	2.589E-03
S	4157(250)	11.89	10.99	4.013E-03	.1543	5.063E-03	.1946	4.903E-03	.1885	2.589E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	MED
5A	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PRESEND	ROLL-MODEL	YAW
7.99	553.0	1315	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	STREF (RE .060 FT)
95.0	.057	2.556	3827	5.015E-05	7.642E-08	2.497E 06	2.401E-02	1.706E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCAM)	TRAN(TO)	BETA(TO)
10F(T)	1572					
3CF(S)	1e04	250	76	.0591	2.232E-01	2.6144E-01
36						

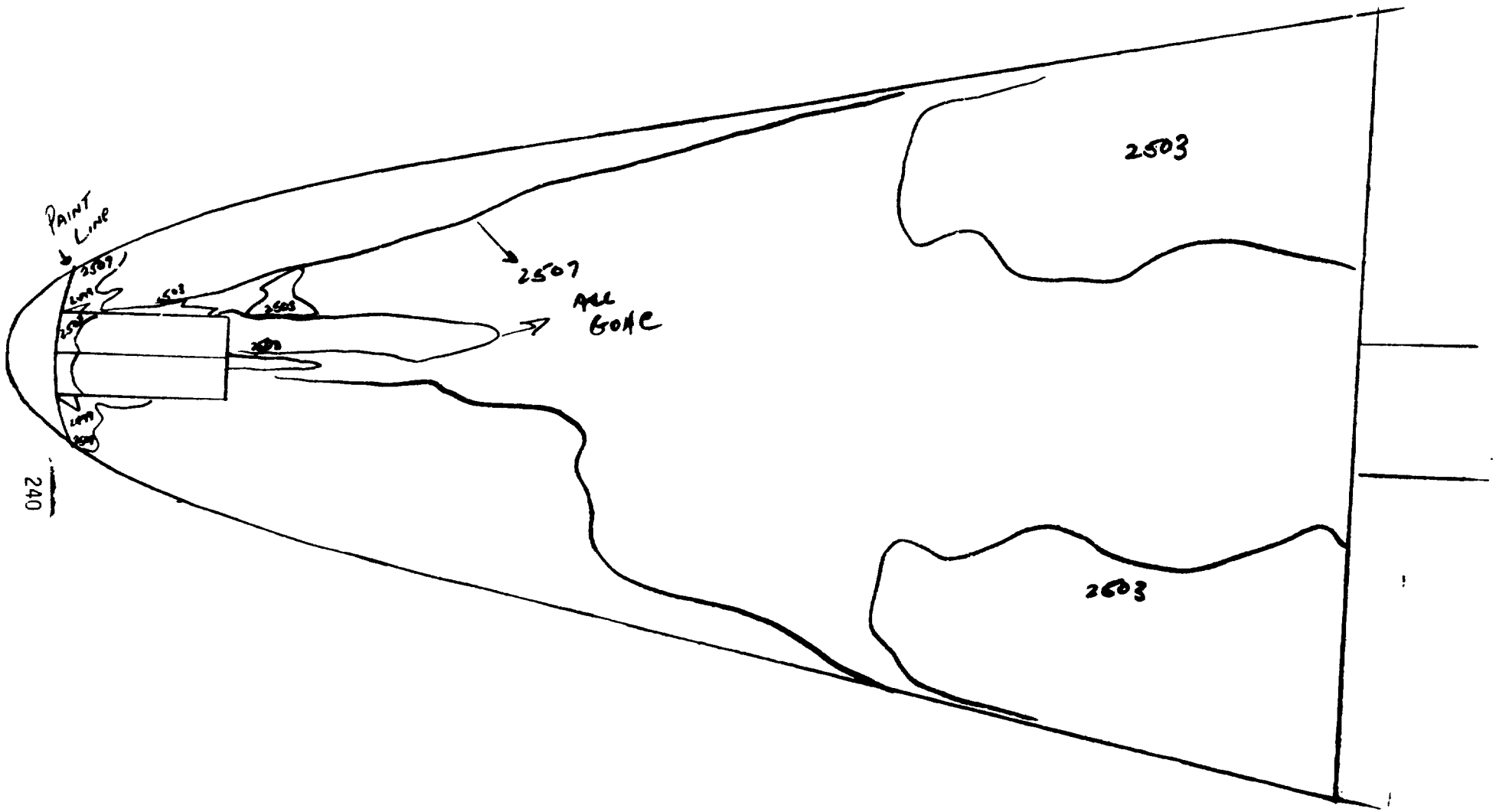
PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)

1572 $T_{\infty} = 350°F$ $\alpha = 30°$ 2493℄

GP57

555 PSIA

860 °F



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V41H-824

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAR GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

10- 7-74 PAGE 1

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	HED
57	4	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	555.9	1314	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HWEF (W= .040 FT)	STWEF (W= .040 FT)
95.4	.057	2.546	3025	5.067E-05	7.660E-08	2.512E 06	2.407E-02	1.694E-02

CAMERA (OR (T) SIDE (S)	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACKA)	TRAR(TO)	BETA(TO)
	1572					
	1604	350	70	.0579	3.505E-01	4.3696E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HWEF	H(.9TO)	H(.9TO)/HWEF	H(.912TO)	H(.912TO)/HWEF	ST(TO)
I	2492(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
S	4162(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	2493(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4163(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.93							
I	2492(350)	2.63	1.73	1.924E-02	.7982	2.543E-02	.9755	2.445E-02	.9380	1.229E-02
S	4162(350)	2.63	1.73	1.924E-02	.7982	2.543E-02	.9755	2.445E-02	.9380	1.229E-02
I	2493(350)	3.70	2.80	1.511E-02	.5795	1.994E-02	.7658	1.920E-02	.7364	9.646E-03
S	4163(350)	3.70	2.80	1.511E-02	.5795	1.994E-02	.7658	1.920E-02	.7364	9.646E-03
56			3.93							
I	2494(350)	4.78	3.88	1.294E-02	.4927	1.697E-02	.6510	1.632E-02	.6260	8.200E-03
S	4164(350)	4.78	3.88	1.294E-02	.4927	1.697E-02	.6510	1.632E-02	.6260	8.200E-03
I	2495(350)	5.86	4.96	1.136E-02	.4359	1.502E-02	.5761	1.446E-02	.5539	7.255E-03
S	4165(350)	5.86	4.96	1.136E-02	.4359	1.502E-02	.5761	1.446E-02	.5539	7.255E-03
I	2496(350)	6.93	6.03	1.030E-02	.3951	1.361E-02	.5222	1.309E-02	.5021	6.577E-03
S	4166(350)	6.93	6.03	1.030E-02	.3951	1.361E-02	.5222	1.309E-02	.5021	6.577E-03
I	2497(350)	8.01	7.11	9.408E-03	.3640	1.254E-02	.4810	1.206E-02	.4625	6.058E-03
S	4167(350)	8.01	7.11	9.408E-03	.3640	1.254E-02	.4810	1.206E-02	.4625	6.058E-03
I	2498(350)	9.09	8.19	8.843E-03	.3392	1.169E-02	.4483	1.124E-02	.4310	5.646E-03
S	4168(350)	9.11	8.21	8.829E-03	.3387	1.167E-02	.4476	1.122E-02	.4304	5.638E-03
I	2499(350)	10.16	9.24	8.313E-03	.3189	1.099E-02	.4214	1.056E-02	.4052	5.308E-03
S	4169(350)	10.16	9.24	8.313E-03	.3189	1.099E-02	.4214	1.056E-02	.4052	5.308E-03
I	2500(350)	11.24	10.34	7.869E-03	.3019	1.040E-02	.3989	9.994E-03	.3836	5.024E-03
S	4170(350)	11.24	10.34	7.869E-03	.3019	1.040E-02	.3989	9.994E-03	.3836	5.024E-03
I	2501(350)	12.31	11.41	7.448E-03	.2873	9.896E-03	.3796	9.515E-03	.3650	4.781E-03
S	4171(350)	12.31	11.41	7.448E-03	.2873	9.896E-03	.3796	9.515E-03	.3650	4.781E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NEW
57	5	PHOTOTHERMANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREVEND	ROLL-MODEL	YAW
7.99	555.9	1314	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
95.4	.057	2.566	3825	9.047E-05	7.0M0E-0M	2.512E 06	2.607E-02	1.699E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAH)	TRAN(TO)	HETA(TO)
10F(T)	1572					
SILF(S)	1604	350	70	.0579	3.505E-01	4.3696E-01
56						

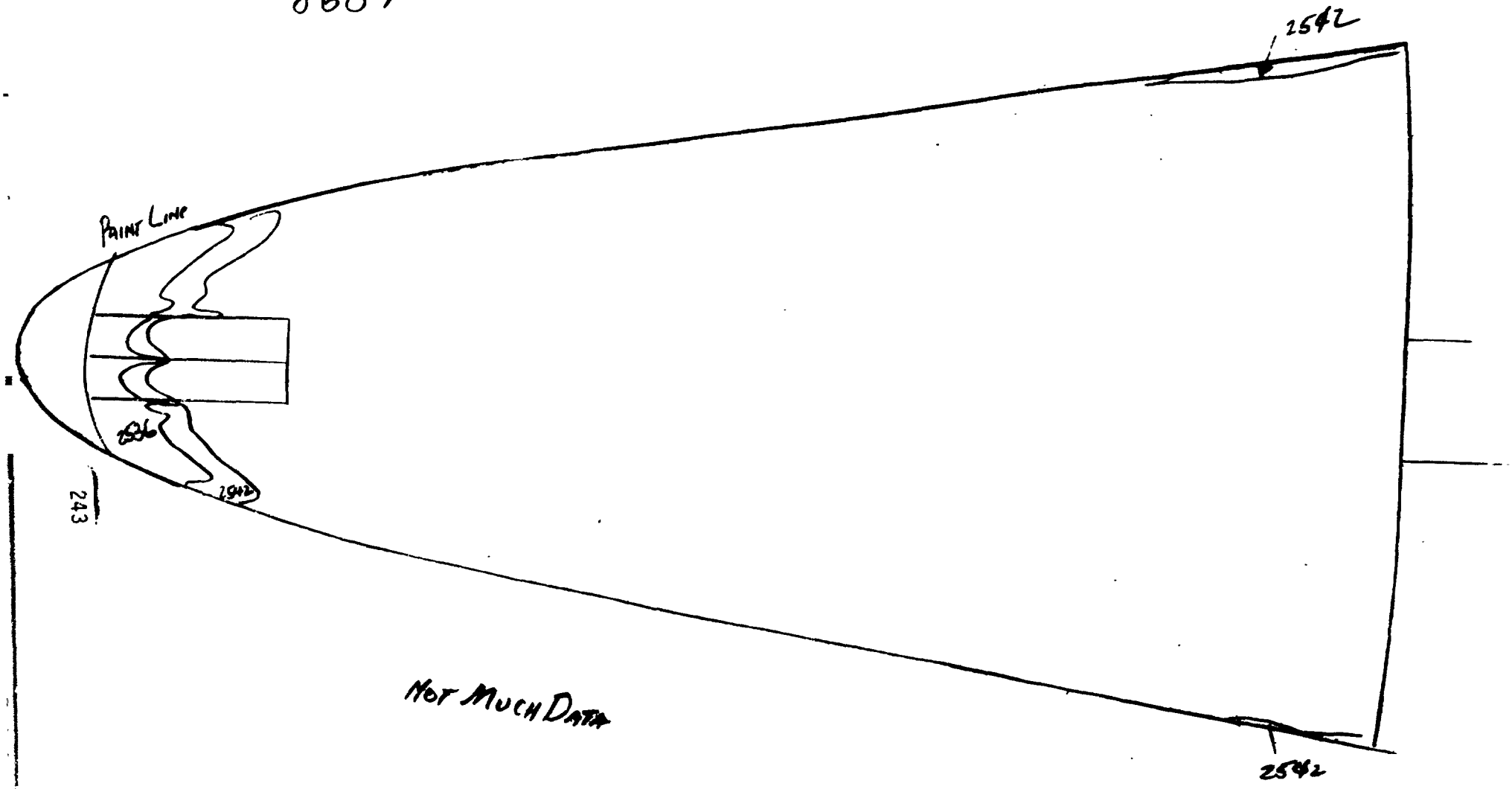
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2502(350)	13.39	12.49	7.159E-03	.2746	9.460E-03	.3629	9.098E-03	.3489	4.571E-03
S	4172(350)	13.39	12.49	7.159E-03	.2746	9.460E-03	.3629	9.098E-03	.3489	4.571E-03
I	2503(350)	14.47	13.57	6.809E-03	.2635	9.077E-03	.3482	8.726E-03	.3348	4.386E-03
S	4173(350)	14.47	13.57	6.809E-03	.2635	9.077E-03	.3482	8.726E-03	.3348	4.386E-03
I	2504(350)	15.54	14.64	6.612E-03	.2534	8.737E-03	.3352	8.401E-03	.3223	4.222E-03
S	4174(350)	15.54	14.64	6.612E-03	.2534	8.737E-03	.3352	8.401E-03	.3223	4.222E-03
S	4175(350)	16.62	15.72	6.361E-03	.2448	8.433E-03	.3235	8.108E-03	.3111	4.074E-03
I	2505(350)	16.64	15.74	6.376E-03	.2446	8.426E-03	.3232	8.102E-03	.3108	4.071E-03
I	2506(350)	17.72	16.82	6.169E-03	.2366	8.152E-03	.3127	7.836E-03	.3007	3.939E-03
S	4176(350)	17.72	16.82	6.169E-03	.2366	8.152E-03	.3127	7.836E-03	.3007	3.939E-03
I	2507(350)	18.77	17.87	5.965E-03	.2296	7.909E-03	.3034	7.604E-03	.2917	3.821E-03
S	4177(350)	18.77	17.87	5.965E-03	.2296	7.909E-03	.3034	7.604E-03	.2917	3.821E-03
		19.80		MODEL HAS LEFT CENTERLINE						
I	250-(350)	19.85	18.95	5.812E-03	.2230	7.661E-03	.2946	7.385E-03	.2833	3.711E-03
S	4178(350)	19.85	18.95	5.812E-03	.2230	7.661E-03	.2946	7.385E-03	.2833	3.711E-03
I	2509(350)	20.92	20.02	5.654E-03	.2169	7.471E-03	.2866	7.184E-03	.2756	3.610E-03
S	4179(350)	20.92	20.02	5.654E-03	.2169	7.471E-03	.2866	7.184E-03	.2756	3.610E-03
I	2510(350)	22.00	21.10	5.508E-03	.2113	7.278E-03	.2792	6.994E-03	.2685	3.517E-03
S	4180(350)	22.00	21.10	5.508E-03	.2113	7.278E-03	.2792	6.994E-03	.2685	3.517E-03
I	2511(350)	23.08	22.18	5.372E-03	.2061	7.100E-03	.2724	6.827E-03	.2619	3.430E-03
S	4181(350)	23.08	22.18	5.372E-03	.2061	7.100E-03	.2724	6.827E-03	.2619	3.430E-03
I	2512(350)	24.15	23.25	5.247E-03	.2013	6.933E-03	.2660	6.667E-03	.2558	3.350E-03
S	4182(350)	24.15	23.25	5.247E-03	.2013	6.933E-03	.2660	6.667E-03	.2558	3.350E-03

C .572 $\alpha = ?$ 2511 ℄ C

G258 $T_{PC} = 300°F$

555 PSIA

860°F



NOT MUCH DATA

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	MED
58	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	TAW
7.98	557.6	1315	19.96	10.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
25.4	.058A	2.570	3027	5.055E-05	7.692E-08	2.517E 06	2.412E-02	1.697E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAK)	TRAR(TO)	BETA(TO)
106(1)	1572					
SICE(S)	1606	300	83	.0568	2.810E-01	3.2304E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	2516(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
5	4186(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
1	2515(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
5	4185(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.68							
1	2516(300)	2.63	1.73	1.346E-02	.5343	1.747E-02	.6882	1.834E-02	.7042	8.908E-03
5	4186(300)	2.63	1.73	1.346E-02	.5343	1.747E-02	.6882	1.834E-02	.7042	8.908E-03
1	2517(300)	3.70	2.80	1.096E-02	.4195	1.411E-02	.5403	1.444E-02	.5529	6.993E-03
5	4187(300)	3.73	2.83	1.096E-02	.4195	1.411E-02	.5403	1.444E-02	.5529	6.993E-03
56			3.95							
1	2518(300)	4.78	3.88	9.314E-03	.3566	1.200E-02	.4593	1.227E-02	.4700	5.945E-03
5	4188(300)	4.78	3.88	9.314E-03	.3566	1.200E-02	.4593	1.227E-02	.4700	5.945E-03
1	2519(300)	5.86	4.96	8.241E-03	.3155	1.061E-02	.4064	1.086E-02	.4159	5.260E-03
5	4189(300)	5.86	4.96	8.241E-03	.3155	1.061E-02	.4064	1.086E-02	.4159	5.260E-03
1	2520(300)	6.93	6.03	7.470E-03	.2860	9.621E-03	.3684	9.845E-03	.3770	4.768E-03
5	4190(300)	6.93	6.03	7.470E-03	.2860	9.621E-03	.3684	9.845E-03	.3770	4.768E-03
1	2521(300)	8.01	7.11	6.881E-03	.2635	8.863E-03	.3394	9.064E-03	.3473	4.393E-03
5	4191(300)	8.01	7.11	6.881E-03	.2635	8.863E-03	.3394	9.064E-03	.3473	4.393E-03
1	2522(300)	9.11	8.21	6.403E-03	.2452	8.247E-03	.3158	8.439E-03	.3231	4.087E-03
5	4192(300)	9.11	8.21	6.403E-03	.2452	8.247E-03	.3158	8.439E-03	.3231	4.087E-03
1	2523(300)	10.16	9.26	6.029E-03	.2309	7.765E-03	.2973	7.946E-03	.3042	3.848E-03
5	4193(300)	10.16	9.26	6.029E-03	.2308	7.765E-03	.2973	7.946E-03	.3042	3.848E-03
1	2524(300)	11.26	10.36	5.700E-03	.2182	7.341E-03	.2811	7.512E-03	.2876	3.638E-03
5	4194(300)	11.26	10.36	5.700E-03	.2182	7.341E-03	.2811	7.512E-03	.2876	3.638E-03
1	2525(300)	12.34	11.44	5.425E-03	.2077	6.987E-03	.2675	7.150E-03	.2738	3.463E-03
5	4195(300)	12.34	11.44	5.425E-03	.2077	6.987E-03	.2675	7.150E-03	.2738	3.463E-03

OHCLF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEA	HED
5M	5	PHOTOMERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-FREEND	ROLL-MODEL	YAW
7.99	557.8	1315	19.96	10.06	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SREF (R= .040 FT)
95.5	.0558	2.574	3827	5.0559E-05	7.6925E-08	2.517E 06	2.6125E-02	1.6977E-02

CAPPHA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACA)	TRAW(TO)	RETA(TO)
10.0(T)	1572					
5(LE(S)	1604	306	83	.0568	2.810E-01	3.2[illegible]94E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	2526(1806)	14.39	13.49	5.142E-03	.1988	6.687E-03	.2560	6.842E-03	.2620	3.314E-03
5	6194(1806)	14.39	13.49	5.142E-03	.1988	6.687E-03	.2560	6.842E-03	.2620	3.314E-03
1	2527(1806)	14.49	13.59	4.977E-03	.1906	6.410E-03	.2454	6.554E-03	.2512	3.177E-03
5	6197(1806)	14.49	13.59	4.977E-03	.1906	6.410E-03	.2454	6.554E-03	.2512	3.177E-03
1	2528(1806)	14.54	14.64	4.745E-03	.1816	6.176E-03	.2365	6.314E-03	.2420	3.061E-03
5	6198(1806)	14.54	14.64	4.745E-03	.1816	6.176E-03	.2365	6.314E-03	.2420	3.061E-03
1	2529(1806)	16.62	15.72	4.624E-03	.1772	5.961E-03	.2282	6.094E-03	.2335	2.954E-03
5	6199(1806)	16.62	15.72	4.624E-03	.1772	5.961E-03	.2282	6.094E-03	.2335	2.954E-03
1	253[illegible](1806)	17.72	16.82	4.476E-03	.1[illegible]	5.762E-03	.2206	5.896E-03	.2258	2.856E-03
5	620[illegible](1806)	17.72	16.82	4.476E-03	.1[illegible]	5.762E-03	.2206	5.896E-03	.2258	2.856E-03
1	2531(1806)	18.80	17.90	4.337E-03	.1661	5.586E-03	.2139	5.716E-03	.2189	2.769E-03
5	6201(1806)	18.80	17.90	4.337E-03	.1661	5.586E-03	.2139	5.716E-03	.2189	2.769E-03
1	2532(1806)	19.87	18.97	4.212E-03	.1613	5.426E-03	.2077	5.552E-03	.2126	2.689E-03
5	6202(1806)	19.87	18.97	4.212E-03	.1613	5.426E-03	.2077	5.552E-03	.2126	2.689E-03
1	2533(1806)	20.95	20.05	4.098E-03	.1569	5.278E-03	.2021	5.401E-03	.2068	2.616E-03
5	6203(1806)	20.95	20.05	4.098E-03	.1569	5.278E-03	.2021	5.401E-03	.2068	2.616E-03
1	2534(1806)	22.03	21.13	3.994E-03	.1529	5.145E-03	.1970	5.264E-03	.2016	2.550E-03
5	6204(1806)	22.03	21.13	3.994E-03	.1529	5.145E-03	.1970	5.264E-03	.2016	2.550E-03
1	2535(1806)	23.12	22.22	3.898E-03	.1491	5.018E-03	.1920	5.132E-03	.1965	2.486E-03
5	6205(1806)	23.12	22.22	3.898E-03	.1491	5.018E-03	.1920	5.132E-03	.1965	2.486E-03
1	2536(1806)	24.15	23.25	3.815E-03	.1457	4.911E-03	.1877	5.015E-03	.1920	2.429E-03
5	6206(1806)	24.15	23.25	3.815E-03	.1457	4.911E-03	.1877	5.015E-03	.1920	2.429E-03
1	2537(1806)	25.23	24.33	3.720E-03	.1424	4.791E-03	.1835	4.908E-03	.1877	2.375E-03
5	6207(1806)	25.23	24.33	3.720E-03	.1424	4.791E-03	.1835	4.908E-03	.1877	2.375E-03
1	2538(1806)	26.31	25.41	3.640E-03	.1394	4.689E-03	.1795	4.794E-03	.1837	2.324E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEX	HEW
5d	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SPECIM	ALPHA-PREMEND	ROLL-MODEL	YAW
7.99	557.8	1315	19.96	19.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	REF (W= .040 FT)	DINEX (W= .040 FT)
95.5	.058	2.574	3627	5.059E-05	7.692E-08	2.517E 06	2.612E-02	1.047E-02

LAMPEA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (NMLACAR)	TRAN(TO)	META(TO)
10P(T)	3572					
51LF(S)	1694	300	93	.0568	2.810E-01	3.2304E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
2	4205(300)	25.33	25.43	3.633E-03	.1393	4.660E-03	.1786	4.795E-03	.1836	2.323E-03
1	2539(300)	27.41	26.51	3.5[illegible]E-03	.1364	4.540E-03	.1758	4.697E-03	.1798	2.275E-03
2	4206(300)	27.41	26.51	3.5[illegible]E-03	.1365	4.540E-03	.1758	4.697E-03	.1798	2.275E-03
1	2540(300)	28.48	27.55	3.4[illegible]E-03	.1338	4.500E-03	.1723	4.604E-03	.1763	2.230E-03
2	4210(300)	28.48	27.55	3.4[illegible]E-03	.1334	4.560E-03	.1723	4.604E-03	.1763	2.230E-03
		29.66		MODEL WAS LEFT CENTERLINE						
1	2541(300)	29.56	28.66	3.427E-03	.1312	4.415E-03	.1690	4.517E-03	.1730	2.188E-03
2	4211(300)	29.56	28.66	3.427E-03	.1312	4.415E-03	.1690	4.517E-03	.1730	2.188E-03
1	2542(300)	30.64	29.74	3.3[illegible]E-03	.1288	4.336E-03	.1659	4.435E-03	.1698	2.148E-03
2	4212(300)	30.64	29.74	3.3[illegible]E-03	.1288	4.336E-03	.1659	4.435E-03	.1698	2.148E-03
1	2543(300)	31.71	30.81	3.3[illegible]E-03	.1266	4.258E-03	.1630	4.357E-03	.1668	2.110E-03
2	4213(300)	31.71	30.81	3.3[illegible]E-03	.1266	4.258E-03	.1630	4.357E-03	.1668	2.110E-03
1	2544(300)	32.79	31.89	3.2[illegible]E-03	.1244	4.185E-03	.1602	4.282E-03	.1640	2.074E-03
2	4214(300)	32.79	31.[illegible]	3.2[illegible]E-03	.1244	4.185E-03	.1602	4.282E-03	.1640	2.074E-03

1572

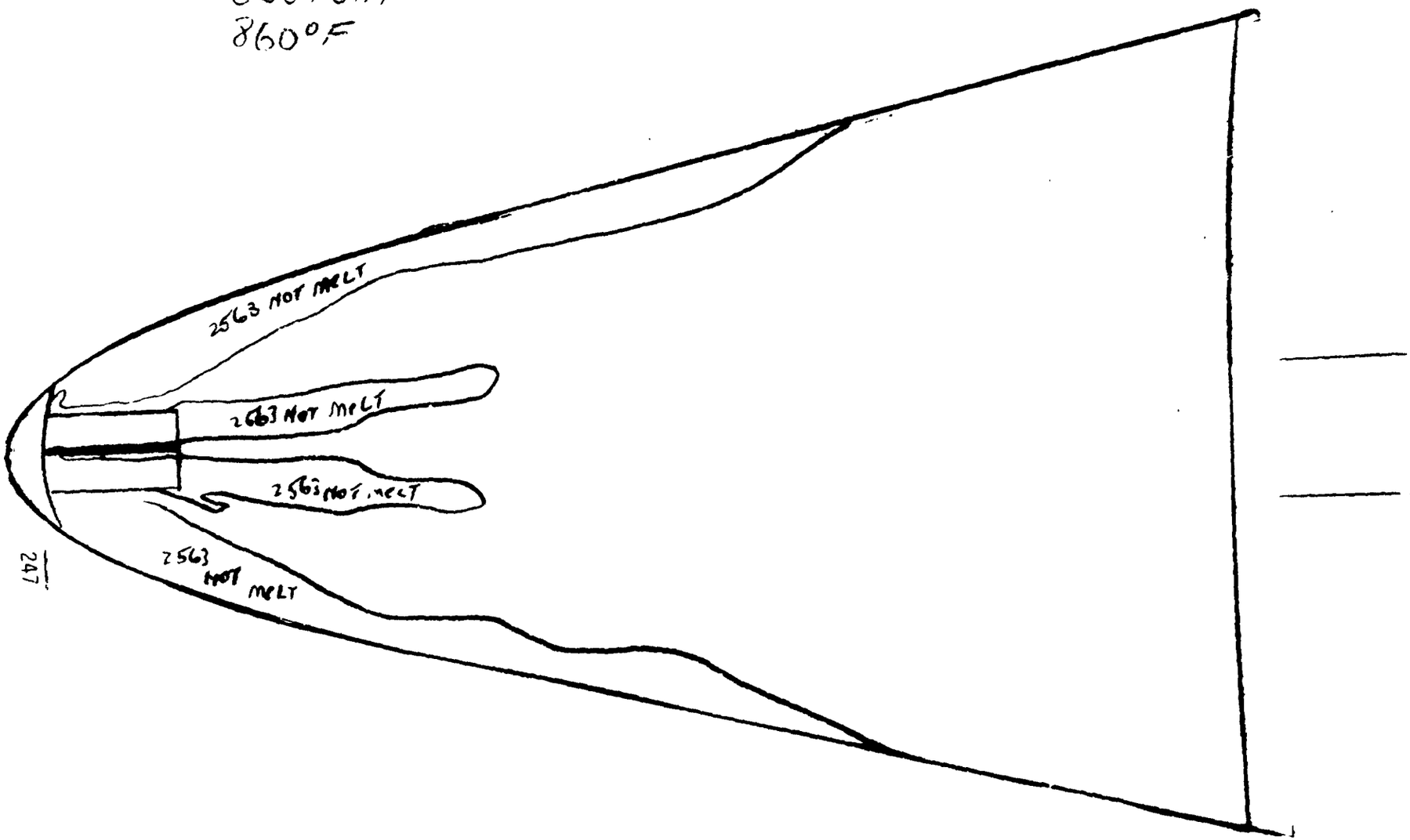
$T_{\infty} = 400°F$

544 ℄

GP59

$\alpha = 40°$

555 PSIA
860°F



WHCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEB	HED
59	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-WREMEND	ROLL-MODEL	YAW
7.99	554.8	1314	39.98	-0.0R	38.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .060 FT)	SIREF (HR .040 FT)
95.8	.057	2.560	3831	5.020E-05	7.704E-08	2.495E 06	2.406E-02	1.704E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACRK)	THAW(TO)	META(TO)
IOF(T)	1572					
SICE(S)	1604	.00	83	.0585	4.049E-01	5.4957E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	2546(400)	.50		MODEL HAS NOT REACHED CENTERLINE						
S	4216(400)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	2547(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4217(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INFCT TIME =			1.63							
I	2548(400)	2.63	1.71	2.655E-02	.4423	3.345E-02	1.2839	2.976E-02	1.1623	1.569E-02
S	4218(400)	2.63	1.71	2.655E-02	.4423	3.345E-02	1.2839	2.976E-02	1.1623	1.569E-02
S	4219(400)	3.70	2.79	1.946E-02	.7366	2.622E-02	1.0063	2.333E-02	.8954	1.230E-02
I	2549(400)	3.73	2.82	1.918E-02	.7353	2.610E-02	1.0019	2.323E-02	.8914	1.224E-02
SG			3.95							
I	2550(400)	4.78	3.87	1.635E-02	.6274	2.228E-02	.8549	1.982E-02	.7606	1.045E-02
S	4220(400)	4.81	3.86	1.630E-02	.6254	2.220E-02	.8522	1.976E-02	.7582	1.041E-02
S	4221(400)	5.86	4.94	1.446E-02	.5550	1.970E-02	.7561	1.753E-02	.6728	9.240E-03
I	2551(400)	5.88	4.97	1.425E-02	.5534	1.965E-02	.7542	1.749E-02	.6711	9.216E-03
S	4222(400)	6.93	6.02	1.310E-02	.5029	1.785E-02	.6852	1.589E-02	.6097	8.373E-03
I	2552(400)	6.96	6.04	1.308E-02	.5019	1.782E-02	.6834	1.585E-02	.6080	8.356E-03
I	2553(400)	8.03	7.12	1.205E-02	.4624	1.642E-02	.6300	1.461E-02	.5605	7.698E-03
S	4223(400)	8.03	7.12	1.205E-02	.4624	1.642E-02	.6300	1.461E-02	.5605	7.698E-03
I	2554(400)	9.11	8.20	1.123E-02	.4310	1.530E-02	.5872	1.361E-02	.5225	7.175E-03
S	4224(400)	9.11	8.20	1.123E-02	.4310	1.530E-02	.5872	1.361E-02	.5225	7.175E-03
I	2555(400)	10.19	9.27	1.036E-02	.4052	1.439E-02	.5521	1.280E-02	.4912	6.746E-03
S	4225(400)	10.19	9.27	1.036E-02	.4052	1.439E-02	.5521	1.280E-02	.4912	6.746E-03
I	2556(400)	11.26	10.35	9.944E-03	.3835	1.362E-02	.5226	1.212E-02	.4650	6.386E-03
S	4226(400)	11.26	10.35	9.944E-03	.3835	1.362E-02	.5226	1.212E-02	.4650	6.386E-03
I	2557(400)	12.34	11.43	9.511E-03	.3670	1.296E-02	.4974	1.153E-02	.4425	6.077E-03
S	4227(400)	12.34	11.43	9.511E-03	.3670	1.296E-02	.4974	1.153E-02	.4425	6.077E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	HED
56	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREMENU	ROLL-MODEL	YAW
7.99	656.8	1318	39.98	-9.98	30.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF	STREF
95.8	.057	2.58C	3831	5.020E-05	7.709E-08	2.495E 06	2.408E-02 (RE .263 FT)	1.700E-02 (RE .060 FT)

CAPPRA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RRCACAK)	TRAR(TO)	RETA(TO)
IOP(T)	1572					
STEE(S)	1604	480	83	.9585	4.049E-01	5.4957E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	255*(400)	13.42	12.53	9.093E-03	.3490	1.239E-02	.4755	1.102E-02	.4230	5.810E-03
5	422*(400)	13.42	12.53	9.093E-03	.3490	1.239E-02	.4755	1.102E-02	.4230	5.810E-03
1	255*(400)	14.49	13.58	8.725E-03	.3349	1.189E-02	.4562	1.054E-02	.4059	5.575E-03
5	422*(400)	14.49	13.58	8.725E-03	.3349	1.189E-02	.4562	1.054E-02	.4059	5.575E-03
1	256*(400)	15.57	14.65	8.385E-03	.3223	1.144E-02	.4392	1.018E-02	.3907	5.366E-03
5	423*(400)	15.57	14.65	8.385E-03	.3223	1.144E-02	.4392	1.018E-02	.3907	5.366E-03
1	256*(400)	16.64	15.73	8.156E-03	.3111	1.104E-02	.4239	9.827E-03	.3771	5.180E-03
5	423*(400)	16.64	15.73	8.156E-03	.3111	1.104E-02	.4239	9.827E-03	.3771	5.180E-03
1	256*(400)	17.72	16.81	7.842E-03	.3010	1.069E-02	.4101	9.507E-03	.3649	5.011E-03
5	423*(400)	17.72	16.81	7.842E-03	.3010	1.069E-02	.4101	9.507E-03	.3649	5.011E-03
1	256*(400)	18.80	17.88	7.603E-03	.2919	1.036E-02	.3976	9.217E-03	.3537	4.858E-03
5	423*(400)	18.80	17.88	7.603E-03	.2919	1.036E-02	.3976	9.217E-03	.3537	4.858E-03
		19.82		MODEL HAS LEFT CENTERLINE						
1	256*(400)	19.87	18.96	7.346E-03	.2836	1.006E-02	.3861	8.951E-03	.3435	4.718E-03
5	423*(400)	19.87	18.96	7.346E-03	.2836	1.006E-02	.3861	8.951E-03	.3435	4.718E-03
1	256*(400)	20.95	20.04	7.183E-03	.2757	9.787E-03	.3756	8.707E-03	.3342	4.589E-03
5	423*(400)	20.95	20.04	7.183E-03	.2757	9.787E-03	.3756	8.707E-03	.3342	4.589E-03
1	256*(400)	22.03	21.11	6.977E-03	.2685	9.534E-03	.3659	8.483E-03	.3255	4.471E-03
5	423*(400)	22.03	21.11	6.977E-03	.2685	9.534E-03	.3659	8.483E-03	.3255	4.471E-03
1	256*(400)	23.10	22.19	6.825E-03	.2619	9.300E-03	.3569	8.274E-03	.3176	4.361E-03
5	423*(400)	23.10	22.19	6.825E-03	.2619	9.300E-03	.3569	8.274E-03	.3176	4.361E-03
	256*(400)	24.18	23.26	6.666E-03	.2558	9.082E-03	.3486	8.081E-03	.3101	4.259E-03
	423*(400)	24.18	23.26	6.666E-03	.2558	9.082E-03	.3486	8.081E-03	.3101	4.259E-03
	256*(400)	25.25	24.34	6.517E-03	.2501	8.879E-03	.3408	7.900E-03	.3032	4.164E-03
5	423*(400)	25.25	24.34	6.517E-03	.2501	8.879E-03	.3408	7.900E-03	.3032	4.164E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HEW
59	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.8	1318	30.98	-0.94	30.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	SIREF (HR .040 FT)
95.8	.057	2.360	3031	5.329E-05	7.709E-08	2.495E 06	2.406E-02	1.706E-02

LAMBDA (DEG)	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HRCACAR)	TRAN(TO)	BETA(TO)
1572						
1604	400		89	.0545	6.0849E-01	5.6457E-01

	PIC NO	TIME	DELTIME	H(10)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
1	2571(400)	26.33	25.42	6.377E-03	.2667	8.684E-03	.3335	7.731E-03	.2967	4.075E-03
2	4261(400)	26.33	25.42	6.377E-03	.2667	8.684E-03	.3335	7.731E-03	.2967	4.075E-03
1	2571(400)	27.41	26.49	6.245E-03	.2397	8.511E-03	.3266	7.572E-03	.2906	3.961E-03
2	4261(400)	27.41	26.49	6.245E-03	.2397	8.511E-03	.3266	7.572E-03	.2906	3.961E-03

E 1572
GP60

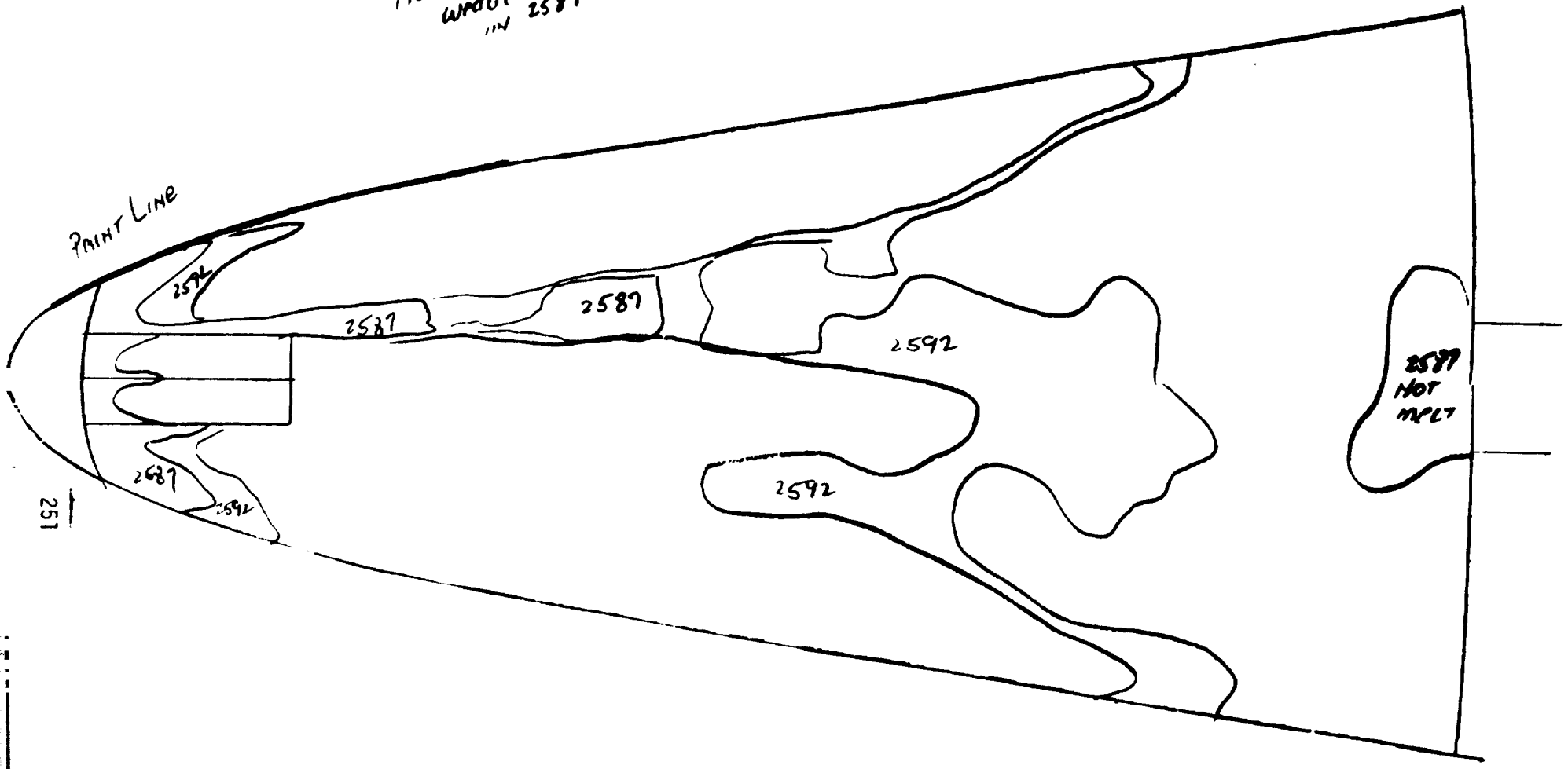
T_{∞} = 300°F

α = 20

2576 ℄

670 PSIA
870 °F

Notice wedge in 2587



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V41--828 — VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

WHCUR	CONFIG	*** MODEL DESCRIPTION ***	CAP LOCATION/SIZE			TRIP LOCATION/SIZE		REB	NEW
			X/L	AZIMUTH	DEPTH	TYPE	X/L	DIA.	
60	5	FRONTUNERANCE W/SIMULATED LANDING GEAR DOOR							

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PHEREND	ROLL-MODEL	YAW
7.94	471.8	1323	20.01	9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	MREF (RE .040 FT)	STREF (RE .040 FT)
96.1	.094	3.170	3838	4.[illegible]E-05	7.735E-08	2.005E 06	2.469E-02	1.552E-02

LAMFCA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
TOP(T)	1572					
SIDE(S)	1604	300	83	.0568	2.782E-01	3.189E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	2573(300)	.08		MODEL HAS NOT REACHED CENTE LINE						
S	4243(300)	.08		MODEL HAS NOT REACHED CENTERLINE						
I	2574(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4244(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.96							
I	2575(300)	2.63	1.73	1.378E-02	.4403	1.771E-02	.6174	1.812E-02	.6314	7.321E-03
S	4245(300)	2.63	1.73	1.372E-02	.4383	1.771E-02	.6174	1.812E-02	.6314	7.321E-03
I	2576(300)	3.70	2.8[illegible]	1.062E-02	.3771	1.391E-02	.4847	1.422E-02	.4957	5.748E-03
S	4246(300)	3.70	2.8[illegible]	1.062E-02	.3771	1.391E-02	.4847	1.422E-02	.4957	5.748E-03
56			3.95							
I	2577(300)	4.78	3.03	9.196E-03	.3206	1.182E-02	.4120	1.204E-02	.4214	4.884E-03
S	4247(300)	4.78	3.03	9.196E-03	.3206	1.182E-02	.4120	1.204E-02	.4214	4.884E-03
I	2578(300)	5.86	4.06	8.137E-03	.2836	1.046E-02	.3646	1.070E-02	.3729	4.323E-03
S	4248(300)	5.86	4.06	8.137E-03	.2836	1.046E-02	.3646	1.070E-02	.3729	4.323E-03
I	2579(300)	6.96	5.04	7.361E-03	.2566	9.461E-03	.3298	9.677E-03	.3373	3.911E-03
S	4249(300)	6.96	5.04	7.361E-03	.2566	9.461E-03	.3298	9.677E-03	.3373	3.911E-03
I	2580(300)	8.03	7.13	6.743E-03	.2354	8.719E-03	.3039	8.917E-03	.3108	3.604E-03
S	4250(300)	8.03	7.13	6.743E-03	.2354	8.719E-03	.3039	8.917E-03	.3108	3.604E-03
I	2581(300)	9.11	8.21	6.323E-03	.2206	8.127E-03	.2833	8.312E-03	.2897	3.359E-03
S	4251(300)	9.11	8.21	6.323E-03	.2206	8.127E-03	.2833	8.312E-03	.2897	3.359E-03
I	2582(300)	10.19	9.29	5.965E-03	.2072	7.642E-03	.2664	7.816E-03	.2724	3.159E-03
S	4252(300)	10.19	9.29	5.965E-03	.2072	7.642E-03	.2664	7.816E-03	.2724	3.159E-03
I	2583(300)	11.26	10.36	5.628E-03	.1962	7.234E-03	.2522	7.394E-03	.2579	2.990E-03
S	4253(300)	11.26	10.36	5.628E-03	.1962	7.234E-03	.2522	7.394E-03	.2579	2.990E-03
I	2584(300)	12.34	11.44	5.357E-03	.1867	6.885E-03	.2400	7.042E-03	.2455	2.846E-03
S	4254(300)	12.34	11.44	5.357E-03	.1867	6.885E-03	.2400	7.042E-03	.2455	2.846E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	WER	WEO
60	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	471.8	1323	20.01	9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	SIREF (RE .040 FT)
96.1	.044	3.110	3034	6.056E-05	7.730E-06	3.005E 06	2.469E-02	1.552E-02

LAMBDA (DEG)	ROLL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKK)	TRAN(TO)	BETA(TO)
10E(1)	1572					
SIEF(S)	1604	300	83	.0544	2.782E-01	3.189BE-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	2595(300)	13.42	12.52	5.121E-03	.1735	6.583E-03	.2295	6.731E-03	.2347	2.721E-03
S	4255(300)	13.42	12.52	5.121E-03	.1735	6.583E-03	.2295	6.731E-03	.2347	2.721E-03
I	2596(300)	14.09	13.59	4.915E-03	.1713	6.317E-03	.2202	6.461E-03	.2252	2.611E-03
S	4256(300)	14.09	13.59	4.915E-03	.1713	6.317E-03	.2202	6.461E-03	.2252	2.611E-03
I	2597(300)	15.56	14.66	4.735E-03	.1650	6.086E-03	.2121	6.224E-03	.2170	2.514E-03
S	4257(300)	15.56	14.66	4.735E-03	.1650	6.086E-03	.2121	6.224E-03	.2170	2.514E-03
I	2598(300)	16.62	15.72	4.570E-03	.1593	5.874E-03	.2047	6.007E-03	.2094	2.429E-03
S	4258(300)	16.62	15.72	4.570E-03	.1593	5.874E-03	.2047	6.007E-03	.2094	2.429E-03
I	2599(300)	17.70	16.82	4.421E-03	.1541	5.683E-03	.1981	5.812E-03	.2026	2.349E-03
S	4259(300)	17.70	16.82	4.421E-03	.1541	5.683E-03	.1981	5.812E-03	.2026	2.349E-03
I	2600(300)	18.77	17.87	4.285E-03	.1494	5.509E-03	.1920	5.634E-03	.1964	2.277E-03
S	4260(300)	18.77	17.87	4.285E-03	.1494	5.509E-03	.1920	5.634E-03	.1964	2.277E-03
I	2601(300)	19.87	18.97	4.159E-03	.1450	5.347E-03	.1864	5.469E-03	.1906	2.219E-03
S	4261(300)	19.87	18.97	4.159E-03	.1450	5.347E-03	.1864	5.469E-03	.1906	2.219E-03
I	2602(300)	20.95	20.05	4.046E-03	.1410	5.201E-03	.1813	5.319E-03	.1854	2.150E-03
S	4262(300)	20.95	20.05	4.046E-03	.1410	5.201E-03	.1813	5.319E-03	.1854	2.150E-03
I	2603(300)	22.03	21.13	3.942E-03	.1374	5.067E-03	.1766	5.182E-03	.1806	2.094E-03
S	4263(300)	22.03	21.13	3.942E-03	.1374	5.067E-03	.1766	5.182E-03	.1806	2.094E-03
		22.93		MODEL HAS LEFT CENTERLINE						
I	2604(300)	23.10	22.2	3.845E-03	.1340	4.943E-03	.1723	5.055E-03	.1762	2.043E-03
S	4264(300)	23.10	22.2	3.845E-03	.1340	4.943E-03	.1723	5.055E-03	.1762	2.043E-03
I	2605(300)	24.15	23.25	3.757E-03	.1310	4.829E-03	.1683	4.934E-03	.1722	1.996E-03
S	4265(300)	24.15	23.25	3.757E-03	.1310	4.829E-03	.1683	4.934E-03	.1722	1.996E-03
I	2606(300)	25.23	24.33	3.673E-03	.1280	4.721E-03	.1646	4.824E-03	.1683	1.952E-03
S	4266(300)	25.23	24.33	3.673E-03	.1280	4.721E-03	.1646	4.824E-03	.1683	1.952E-03

VAIH-H28

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEX	HEU
60	5	PROTO-ERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRESENT	ROLL-MODEL	YAW
7.99	671.8	1323	20.01	9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUG-S/FT3)	MU-INF (SLU-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
96.1	.069	3.100	3838	4.05PE-05	7.736E-06	3.005E 06	2.469E-02	1.552E-02

CAPERA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCXCXK)	TBAR(TO)	HETA(TO)
TOP(T)	1572					
SIDE(S)	1604	300	83	.0569	2.782E-01	3.1849E-01
SG						

	MIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
S	4267(403)	26.28	2.39	3.575E-03	.1256	4.623E-03	.1611	4.72-E-03	.1646	1.911E-03
T	2597(300)	26.21	2.61	3.546E-03	.1253	4.620E-03	.1610	4.725E-03	.1647	1.918E-03
T	2596(303)	27.28	2.64	3.521E-03	.1227	4.526E-03	.1577	4.624E-03	.1613	1.871E-03
S	4268(403)	27.38	2.64	3.521E-03	.1227	4.526E-03	.1577	4.624E-03	.1613	1.871E-03

1572

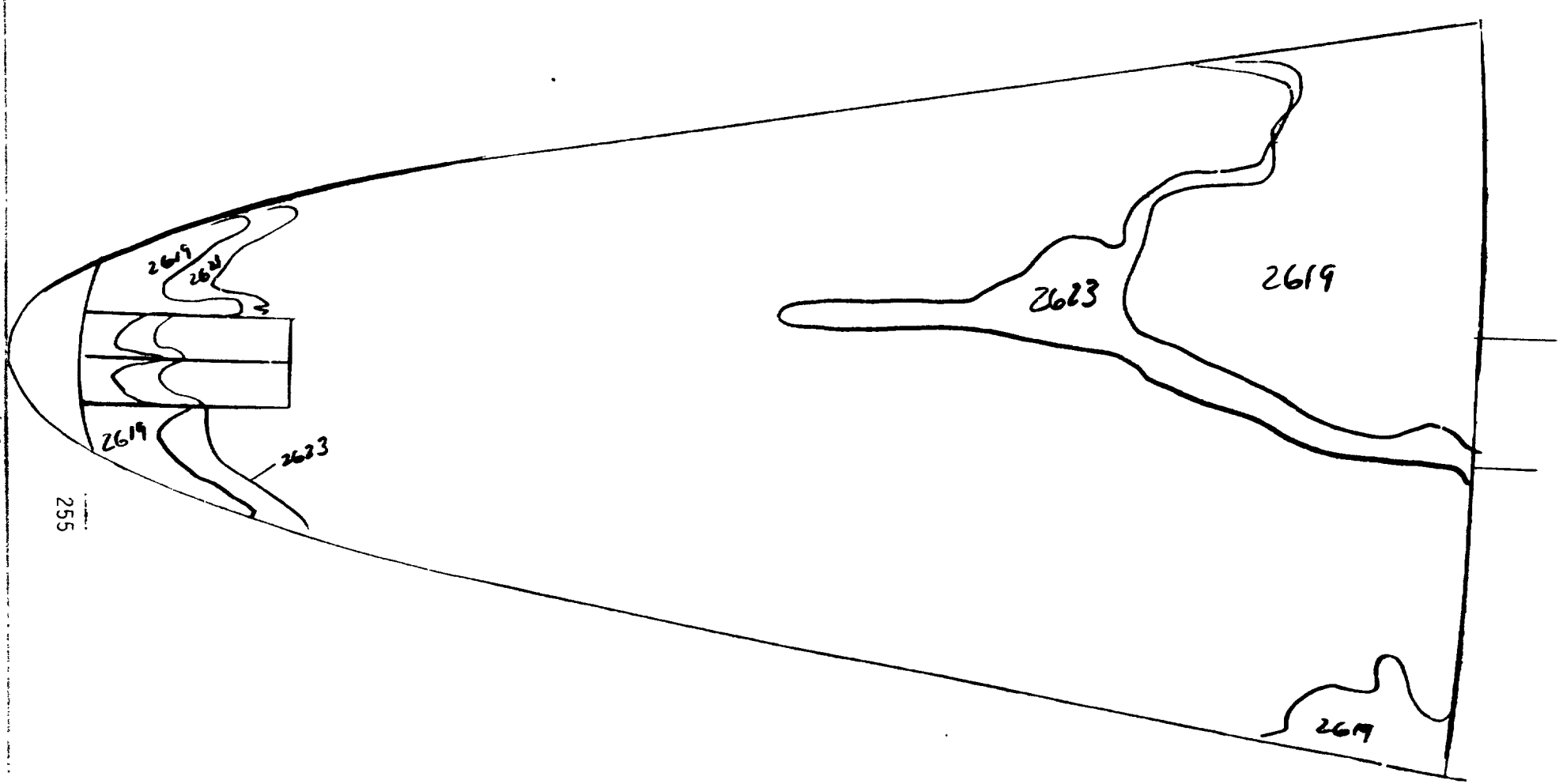
GP61

610PSIA

865°F

$T_R = 300°F$ $\alpha = 2a°$

2603 ℄



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V41H-R20 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HEU
61	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	TAW
7.99	610.1	1314	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
95.4	.053	2.815	3025	5.538E-05	7.684E-08	2.757E 06	2.731E-02	1.627E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOKCAS)	TBAR(TO)	HETA(TO)
10P(T)	1572					
SIDE(S)	1604	300	83	.0548	2.814E-01	3.237HE-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	2600(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
S	4270(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	2601(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4271(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.67								
I	2602(300)	2.63	1.73	1.399E-02	.5122	1.802E-02	.6590	1.844E-02	.6753	8.160E-03
S	4272(300)	2.63	1.73	1.399E-02	.5122	1.802E-02	.6590	1.844E-02	.6753	8.160E-03
I	2603(300)	3.68	2.79	1.123E-02	.4039	1.421E-02	.5205	1.454E-02	.5326	6.435E-03
S	4273(300)	3.68	2.79	1.123E-02	.4039	1.421E-02	.5205	1.454E-02	.5326	6.435E-03
SG		3.93								
I	2604(300)	4.76	3.84	9.305E-03	.3430	1.207E-02	.4419	1.235E-02	.4522	5.464E-03
S	4274(300)	4.76	3.84	9.305E-03	.3430	1.207E-02	.4419	1.235E-02	.4522	5.464E-03
I	2605(300)	5.83	4.93	8.251E-03	.3032	1.067E-02	.3908	1.092E-02	.3998	4.831E-03
S	4275(300)	5.83	4.93	8.251E-03	.3032	1.067E-02	.3908	1.092E-02	.3998	4.831E-03
I	2606(300)	6.91	6.01	7.533E-03	.2767	9.668E-03	.3549	9.892E-03	.3622	4.377E-03
S	4276(300)	6.91	6.01	7.467E-03	.2742	9.648E-03	.3533	9.871E-03	.3615	4.368E-03
I	2607(300)	7.98	7.08	6.919E-03	.2530	8.903E-03	.3260	9.110E-03	.3336	4.031E-03
S	4277(300)	7.98	7.08	6.919E-03	.2530	8.903E-03	.3260	9.110E-03	.3336	4.031E-03
I	2608(300)	9.06	8.16	6.438E-03	.2357	8.295E-03	.3038	8.488E-03	.3108	3.756E-03
S	4278(300)	9.06	8.16	6.438E-03	.2357	8.295E-03	.3038	8.488E-03	.3108	3.756E-03
I	2609(300)	10.14	9.24	6.051E-03	.2216	7.797E-03	.2855	7.978E-03	.2922	3.530E-03
S	4279(300)	10.14	9.24	6.051E-03	.2216	7.797E-03	.2855	7.978E-03	.2922	3.530E-03
I	2610(300)	11.21	10.31	5.727E-03	.2097	7.379E-03	.2702	7.550E-03	.2765	3.341E-03
S	4280(300)	11.21	10.31	5.727E-03	.2097	7.379E-03	.2702	7.550E-03	.2765	3.341E-03
I	2611(300)	12.26	11.38	5.449E-03	.1996	7.022E-03	.2571	7.185E-03	.2631	3.179E-03
S	4281(300)	12.29	11.38	5.449E-03	.1996	7.022E-03	.2571	7.185E-03	.2631	3.179E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	HED
61	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENU	ROLL-MODEL	YAW
7.99	418.1	1314	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	J-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	STREF (RE .040 FT)
95.4	.083	2.819	1825	5.538E-05	7.844E-08	2.757E 06	2.731E-02	1.622E-02

LAMPEA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACM)	TRAN(TO)	BETA(TO)
TOP(T)	1572					
SIDE(S)	1604	300	43	.0548	2.814E-01	3.237BE-01
56						

	MIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	2612(300)	13.37	12.47	5.209E-03	.1907	6.712E-03	.2458	6.868E-03	.2515	3.039E-03
S	4292(300)	13.37	12.47	5.209E-03	.1907	6.712E-03	.2458	6.868E-03	.2515	3.039E-03
I	2613(300)	14.44	13.54	4.998E-03	.1830	6.440E-03	.2358	6.589E-03	.2413	2.914E-03
S	4293(300)	14.44	13.54	4.998E-03	.1830	6.440E-03	.2358	6.589E-03	.2413	2.915E-03
I	2614(300)	15.52	14.62	4.810E-03	.1761	6.198E-03	.2270	6.342E-03	.2322	2.806E-03
S	4294(300)	15.52	14.62	4.810E-03	.1761	6.198E-03	.2270	6.342E-03	.2322	2.806E-03
I	2615(300)	16.59	15.69	4.642E-03	.1700	5.982E-03	.2191	6.121E-03	.2241	2.708E-03
S	4295(300)	16.59	15.69	4.642E-03	.1700	5.982E-03	.2191	6.121E-03	.2241	2.708E-03
I	2616(300)	17.67	16.77	4.491E-03	.1645	5.787E-03	.2119	5.921E-03	.2168	2.620E-03
S	4296(300)	17.67	16.77	4.491E-03	.1645	5.787E-03	.2119	5.921E-03	.2168	2.620E-03
I	2617(300)	18.75	17.85	4.353E-03	.1594	5.610E-03	.2056	5.740E-03	.2102	2.540E-03
S	4297(300)	18.75	17.85	4.353E-03	.1594	5.610E-03	.2056	5.740E-03	.2102	2.540E-03
I	2618(300)	19.82	18.92	4.228E-03	.1548	5.445E-03	.1995	5.57 -03	.2041	2.466E-03
S	4298(300)	19.82	18.92	4.228E-03	.1548	5.445E-03	.1995	5.574E-03	.2041	2.466E-03
I	2619(300)	20.90	20.00	4.112E-03	.1506	5.299E-03	.1941	5.422E-03	.1986	2.399E-03
S	4299(300)	20.90	20.00	4.112E-03	.1506	5.299E-03	.1941	5.422E-03	.1986	2.399E-03
I	2620(300)	21.98	21.08	4.006E-03	.1467	5.162E-03	.1890	5.282E-03	.1934	2.337E-03
S	4300(300)	21.98	21.08	4.006E-03	.1467	5.162E-03	.1890	5.282E-03	.1934	2.337E-03
I	2621(300)	23.05	22.15	3.907E-03	.1431	5.035E-03	.1844	5.152E-03	.1887	2.280E-03
S	4301(300)	23.05	22.15	3.907E-03	.1431	5.035E-03	.1844	5.152E-03	.1887	2.280E-03
		23.23		MODEL HAS LEFT CENTERLINE						
I	2622(300)	24.13	23.23	3.816E-03	.1397	4.917E-03	.1801	5.031E-03	.1842	2.226E-03
S	4302(300)	24.13	23.23	3.816E-03	.1397	4.917E-03	.1801	5.031E-03	.1842	2.226E-03
I	2623(300)	25.20	24.30	3.730E-03	.1366	4.807E-03	.1760	4.918E-03	.1801	2.176E-03
S	4303(300)	25.20	24.30	3.730E-03	.1365	4.807E-03	.1760	4.918E-03	.1801	2.176E-03

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V41R-626

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

10- 7-74 PAGE 3

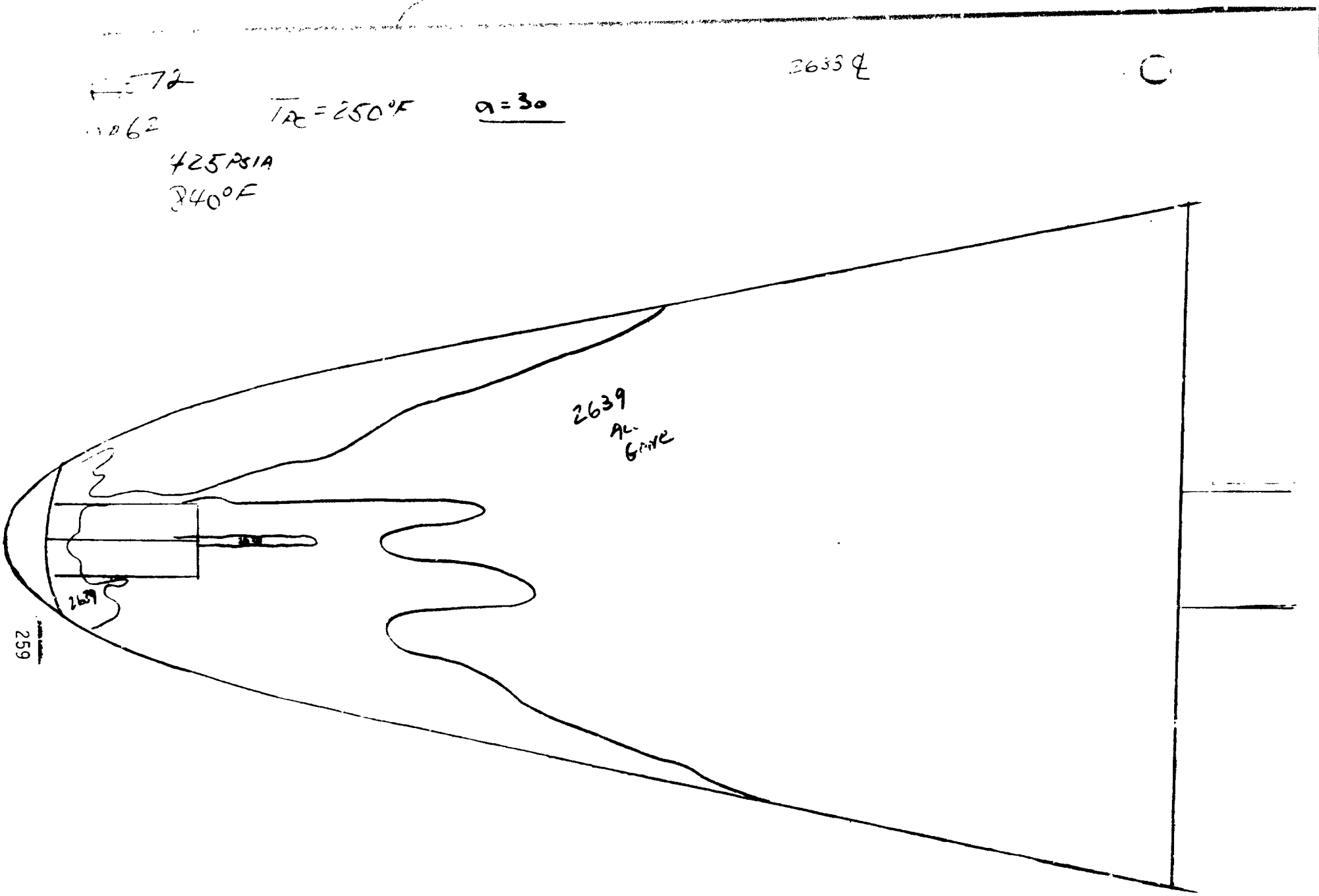
GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	NEU
61	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	610.1	1314	19.98	19.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
95.4	.063	2.815	3825	8.538E-05	7.844E-04	2.757E 06	2.731E-02	1.622E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAPAR)	TRAN(TO)	BETA(TO)
TOP(T)	1572					
STLE(S)	.006	300	93	.0548	2.816E-01	3.237HE-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/RREF	H(.9TO)	H(.9TO)/RREF	H(.892TO)	H(.892TO)/RREF	ST(TO)
1	262(1400)	26.28	2[illegible].35	3.6[illegible]E-03	.1337	4.704E-03	.1723	4.813E-03	.1763	2.130E-03
5	429(1401)	26.28	2[illegible].35	3.6[illegible]E-03	.1337	4.704E-03	.1723	4.813E-03	.1763	2.130E-03
1	262(1400)	27.36	26.64	3.575E-03	.1309	4.607E-03	.1687	4.71[illegible]E-03	.1726	2.086E-03
5	429(1401)	27.36	26.64	3.575E-03	.1309	4.607E-03	.1687	4.71[illegible]E-03	.1726	2.086E-03
1	262(1400)	28.63	27.53	3.5[illegible]5E-03	.1286	4.516E-03	.1654	4.621E-03	.1692	2.045E-03
5	429(1401)	28.63	27.53	3.5[illegible]5E-03	.1286	4.516E-03	.1654	4.621E-03	.1692	2.045E-03
1	262(1400)	29.51	28.61	3.4[illegible]5E-03	.1259	4.431E-03	.1623	4.533E-03	.1660	2.006E-03
5	429(1401)	29.51	28.61	3.4[illegible]5E-03	.1259	4.431E-03	.1623	4.533E-03	.1660	2.006E-03
1	262(1400)	30.59	29.63	3.375E-03	.1236	4.350E-03	.1593	4.450E-03	.1630	1.969E-03
5	429(1401)	30.59	29.65	3.375E-03	.1236	4.350E-03	.1593	4.45[illegible]E-03	.1630	1.969E-03


72
062
$\overline{T}_R = 250°F$
a = 30
425 PSIA
940°F
2639 ℄
C
2639
AL
GRIDE
2639

NASA-RI DM 56 AEDC(AMD)(PC) ARNOLD AFS,TENNESSEE 10- 7-76 PAGE 1

V41H-H20 VON KARMAN GAS : AMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP CONFIG *** MODEL DESCRIPTION *** GAP LOCATION/SIZE WIP LOCATION/SIZE REB REQ
X/L WIDTH DEPTH TYPE X/L DIA.

02 5 PROTUBERANCE W/SIMULATED LANDING GEAR DOOR

MACH (M)	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREREND	ROLL-MODEL	YAW
7.48	626.9	1292	29.98	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	M-INF (FT/SEC)	V-INF (SLUG-S/FT3)	RHO-INF (SLUG/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .060 FT)	SREF (IN .060 FT)
94.1	[illegible]	1.981	3743	3.066E-05	1.575E-08	1.585E 06	2.286E-02	1.916E-02

LAMBDA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
10F(1)	1572					
5IDF(5)	1604	250	95	.0551	2.208E-01	2.381E-01
5G						

	PIC NO	TIME DELTIME	H(10)	H(10)/HREF	H(.91C)	H(.91C)/HREF	H(.912TO)	H(.912TO)/HREF	ST(10)
1	2631(250)	.00	MODEL HAS NOT REACHED CENTERLINE						
5	4300(250)	.00	MODEL HAS NOT REACHED CENTERLINE						
1	2631(250)	1.55	MODEL HAS NOT REACHED CENTERLINE						
5	4301(250)	1.55	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.60							
1	2632(250)	2.03 1.73	9.941E-03	.4373	1.207E-02	.5548	1.226E-02	.5366	8.237E-03
5	4302(250)	2.03 1.73	9.941E-03	.4373	1.207E-02	.5548	1.226E-02	.5366	8.237E-03
1	2633(250)	3.72 2.85	7.835E-03	.3431	9.944E-03	.4354	9.622E-03	.4213	6.487E-03
5	4303(250)	3.70 2.88	7.835E-03	.3431	9.944E-03	.4354	9.622E-03	.4213	6.487E-03
56		3.93							
1	2634(250)	4.78 3.88	6.662E-03	.2916	8.456E-03	.3701	8.180E-03	.3581	5.497E-03
5	4304(250)	4.78 3.88	6.662E-03	.2916	8.456E-03	.3701	8.180E-03	.3581	5.497E-03
1	2635(250)	5.66 4.94	5.844E-03	.2560	7.480E-03	.3275	7.238E-03	.3169	4.864E-03
5	4305(250)	5.66 4.94	5.844E-03	.2560	7.480E-03	.3275	7.238E-03	.3169	4.864E-03
1	2636(250)	6.53 6.03	5.343E-03	.2339	6.780E-03	.2968	6.561E-03	.2872	4.409E-03
5	4306(250)	6.53 6.03	5.343E-03	.2339	6.780E-03	.2968	6.561E-03	.2872	4.409E-03
1	2637(250)	8.01 7.11	4.922E-03	.2155	6.246E-03	.2735	6.044E-03	.2646	4.062E-03
5	4307(250)	8.01 7.11	4.922E-03	.2155	6.246E-03	.2735	6.044E-03	.2646	4.062E-03
1	2638(250)	9.09 8.19	4.577E-03	.2004	5.821E-03	.2548	5.633E-03	.2466	3.785E-03
5	4308(250)	9.09 8.19	4.577E-03	.2004	5.821E-03	.2548	5.633E-03	.2466	3.785E-03
1	2639(250)	10.15 9.24	4.312E-03	.1888	5.472E-03	.2396	5.295E-03	.2318	3.559E-03
5	4309(250)	10.16 9.24	4.312E-03	.1888	5.472E-03	.2396	5.295E-03	.2318	3.559E-03
1	2640(250)	11.24 10.34	4.062E-03	.1787	5.180E-03	.2268	5.012E-03	.2194	3.368E-03
5	4310(250)	11.24 10.34	4.062E-03	.1787	5.180E-03	.2268	5.012E-03	.2194	3.368E-03
		11.91	MODEL HAS LEFT CENTERLINE						
1	2641(250)	12.21 11.41	3.886E-03	.1701	4.930E-03	.2158	4.770E-03	.2088	3.206E-03
5	4311(250)	12.21 11.41	3.886E-03	.1701	4.930E-03	.2158	4.770E-03	.2088	3.206E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEA	HEU
62	5	FRONT/REARWARD W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	426.9	1292	24.98	.02	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RN .040 FT)	SIREF (RN .040 FT)
94.1	.044	1.94	3793	3.344E-05	7.575E-08	1.498E 06	2.284E-02	1.916E-02

GAMMA	MOLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAA)	TRAN(TO)	HETA(TO)
10F(1)	1572					
>(LPIS)	1604	250	85	.0591	2.208E-01	2.391HE-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	2442(250)	13.42	12.52	3.710E-03	.1624	4.708E-03	.2061	4.555E-03	.1996	3.061E-03
>	4316(250)	13.42	12.52	3.710E-03	.1624	4.708E-03	.2061	4.555E-03	.1996	3.061E-03
1	2443(250)	14.69	13.55	3.558E-03	.1558	4.517E-03	.1978	4.371E-03	.1914	2.938E-03
>	4317(250)	14.69	13.55	3.558E-03	.1558	4.517E-03	.1978	4.371E-03	.1914	2.938E-03
1	2444(250)	15.57	14.67	3.427E-03	.1500	4.349E-03	.1904	4.206E-03	.1842	2.829E-03
>	4318(250)	15.57	14.67	3.427E-03	.1500	4.349E-03	.1904	4.206E-03	.1842	2.829E-03
1	2445(250)	16.64	15.74	3.367E-03	.1499	4.197E-03	.1838	4.061E-03	.1778	2.729E-03
>	4319(250)	16.64	15.74	3.367E-03	.1498	4.197E-03	.1838	4.061E-03	.1778	2.729E-03
1	2446(250)	17.72	16.82	3.200E-03	.1401	4.061E-03	.1778	3.926E-03	.1720	2.641E-03
>	4320(250)	17.72	16.82	3.200E-03	.1401	4.061E-03	.1777	3.926E-03	.1720	2.641E-03

1572

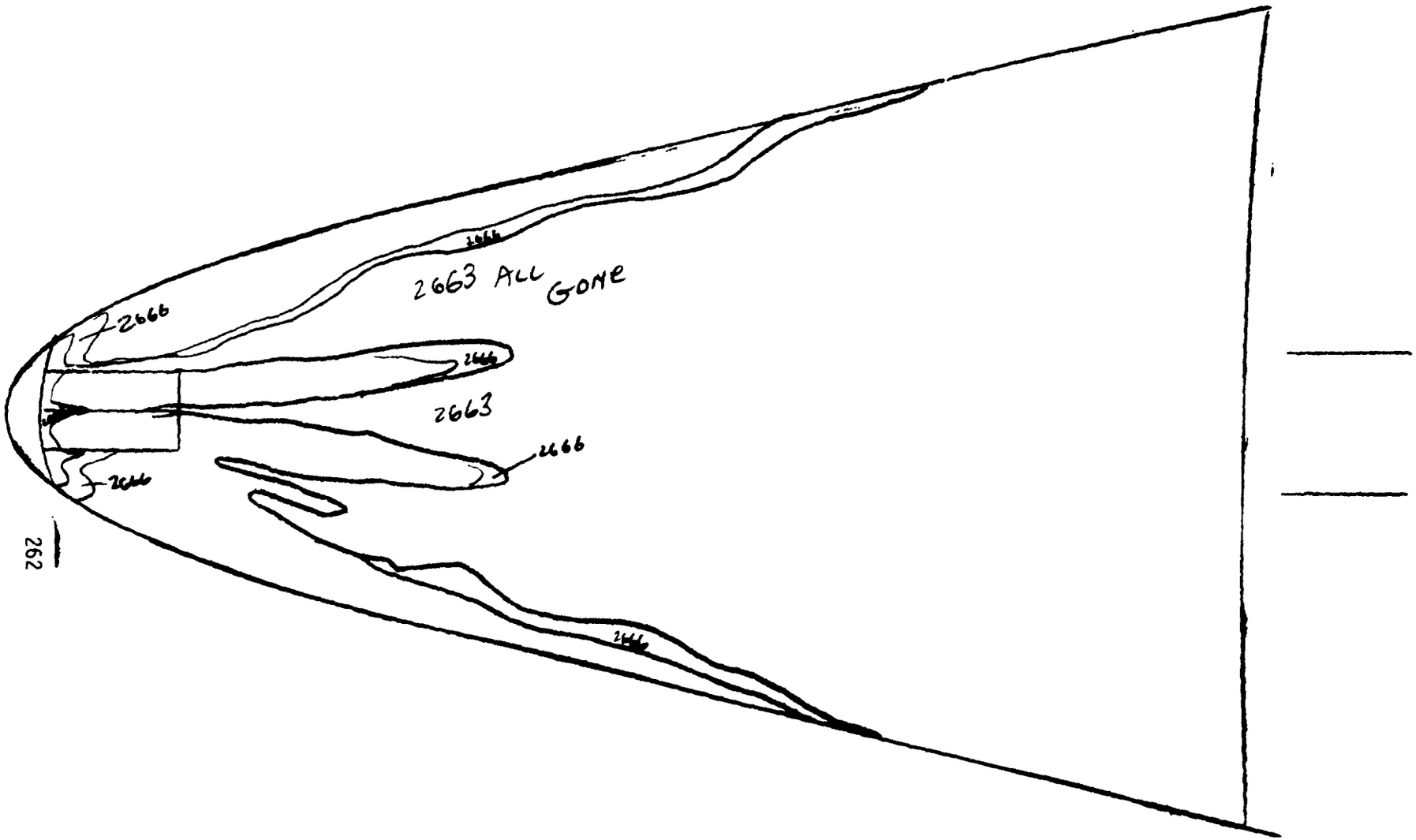
GP63

T_{PC} = 380°F

2651 ℄

α = 40°

425 PSIA
840°F



WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
63	6	PROTO-PERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	426.0	1290	40.02	-10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RE .040 FT)	STREF (RE .040 FT)
93.9	.046	1.976	3790	3.946E-05	7.562E-08	1.587E 06	2.282E-02	1.913E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	PETA(TO)
10F(1	1572					
51LF(1	1604	450	97	.0579	3.534E-01	4.610YE-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	2645(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
S	6314(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
I	2646(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	6315(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.00							
I	2650(350)	2.00	1.70	1.9[illegible]5E-02	[illegible]	2.023E-02	1.1492	2.353E-02	1.0312	1.614E-02
S	6320(350)	2.00	1.73	1.9[illegible]5E-02	[illegible]	2.023E-02	1.1492	2.353E-02	1.0312	1.614E-02
I	2651(350)	3.64	2.78	1.5[illegible]6E-02	[illegible]	2.053E-02	.8596	1.842E-02	.8073	1.264E-02
S	6321(350)	3.69	2.78	1.5[illegible]5E-02	[illegible]	2.053E-02	.8596	1.842E-02	.8073	1.264E-02
56			3.40							
I	2652(350)	4.76	3.84	1.3[illegible]6E-02	.5725	1.763E-02	.7439	1.564E-02	.6656	1.073E-02
S	6322(350)	4.76	3.84	1.3[illegible]6E-02	.5725	1.763E-02	.7439	1.564E-02	.6656	1.073E-02
I	2653(350)	5.83	4.93	1.1[illegible]5E-02	.5062	1.541E-02	.6756	1.383E-02	.6060	9.484E-03
S	6323(350)	5.83	4.93	1.1[illegible]5E-02	.5062	1.541E-02	.6756	1.383E-02	.6060	9.484E-03
I	2654(350)	6.91	6.01	1.0[illegible]7E-02	.4584	1.347E-02	.6119	1.253E-02	.5491	8.594E-03
S	6324(350)	6.91	6.01	1.0[illegible]7E-02	.4584	1.347E-02	.6119	1.253E-02	.5491	8.594E-03
I	2655(350)	7.98	7.08	9.[illegible]3E-03	.4223	1.286E-02	.5635	1.154E-02	.5057	7.915E-03
S	6325(350)	7.98	7.08	9.[illegible]3E-03	.4223	1.286E-02	.5635	1.154E-02	.5057	7.915E-03
I	2656(350)	9.06	8.16	8.9[illegible]0E-03	.3935	1.198E-02	.5251	1.075E-02	.4711	7.374E-03
S	6326(350)	9.06	8.16	8.9[illegible]0E-03	.3935	1.198E-02	.5251	1.075E-02	.4711	7.374E-03
I	2657(350)	10.11	9.21	8.4[illegible]2E-03	.3704	1.128E-02	.4942	1.012E-02	.4435	6.941E-03
S	6327(350)	10.11	9.21	8.4[illegible]2E-03	.3704	1.128E-02	.4942	1.012E-02	.4435	6.941E-03
I	2658(350)	11.21	10.31	7.9[illegible]8E-03	.3500	1.066E-02	.4671	9.565E-03	.4191	6.560E-03
S	6328(350)	11.21	10.31	7.9[illegible]8E-03	.3500	1.066E-02	.4671	9.565E-03	.4191	6.560E-03
I	2659(350)	12.26	11.36	7.6[illegible]3E-03	.3335	1.015E-02	.4449	9.112E-03	.3993	6.249E-03
S	6329(350)	12.26	11.36	7.6[illegible]3E-03	.3335	1.015E-02	.4449	9.112E-03	.3993	6.249E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	RED
63	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	426.0	1240	40.02	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
93.6	.000	1.976	3790	3.946E-05	7.562E-06	1.987E 06	2.282E-02	1.913E-02

CAPPLA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAA)	TBAR(TO)	HETA(TO)
IOF(T)	1572					
SILF(S)	1604	350	87	.0579	3.539E-01	4.630YE-01
SG						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.9TO)	M(.9TO)/MREF	M(.93TO)	M(.93TO)/MREF	ST(TO)
1	265(350)	13.34	12.44	7.273E-03	.3157	9.705E-03	.4253	8.704E-03	.3816	5.973E-03
5	433(350)	13.34	12.44	7.273E-03	.3187	9.705E-03	.4253	8.704E-03	.3816	5.973E-03
1	266(350)	14.42	13.52	6.978E-03	.3058	9.311E-03	.4080	8.355E-03	.3661	5.730E-03
5	434(350)	14.42	13.52	6.978E-03	.3058	9.311E-03	.4080	8.355E-03	.3661	5.730E-03
1	266(350)	15.49	14.59	6.715E-03	.2943	8.961E-03	.3927	8.041E-03	.3523	5.515E-03
5	435(350)	15.49	14.59	6.715E-03	.2943	8.961E-03	.3927	8.041E-03	.3523	5.515E-03
	268(350)	16.57	15.67	6.491E-03	.2850	8.648E-03	.3749	7.761E-03	.3400	5.322E-03
5	436(350)	16.57	15.67	6.491E-03	.2850	8.648E-03	.3749	7.761E-03	.3400	5.322E-03
1	269(350)	17.65	16.75	6.285E-03	.2767	8.365E-03	.3646	7.506E-03	.3289	5.168E-03
5	437(350)	17.65	16.75	6.285E-03	.2767	8.365E-03	.3646	7.506E-03	.3289	5.168E-03
1	269(350)	18.72	17.82	6.077E-03	.2663	8.109E-03	.3553	7.276E-03	.3188	4.990E-03
5	438(350)	18.72	17.82	6.077E-03	.2663	8.109E-03	.3553	7.276E-03	.3188	4.990E-03
		19.02		MODEL HAS LEFT CENTERLINE						
1	269(350)	19.80	18.90	5.872E-03	.2584	7.874E-03	.3450	7.066E-03	.3096	4.846E-03
5	439(350)	19.80	18.90	5.872E-03	.2584	7.874E-03	.3450	7.066E-03	.3096	4.846E-03
1	269(350)	20.87	19.97	5.740E-03	.2515	7.659E-03	.3356	6.873E-03	.3012	4.714E-03
5	440(350)	20.87	19.97	5.740E-03	.2515	7.659E-03	.3356	6.873E-03	.3012	4.714E-03
1	269(350)	21.95	21.05	5.592E-03	.2450	7.461E-03	.3269	6.695E-03	.2934	4.592E-03
5	441(350)	21.95	21.05	5.592E-03	.2450	7.461E-03	.3269	6.695E-03	.2934	4.592E-03
1	269(350)	23.03	22.13	5.445E-03	.2386	7.277E-03	.3189	6.530E-03	.2861	4.479E-03
5	442(350)	23.03	22.13	5.445E-03	.2386	7.277E-03	.3189	6.530E-03	.2861	4.479E-03
1	247(350)	24.10	23.20	5.322E-03	.2334	7.107E-03	.3114	6.377E-03	.2794	4.373E-03
5	443(350)	24.10	23.20	5.322E-03	.2334	7.107E-03	.3114	6.377E-03	.2794	4.373E-03
1	271(350)	25.18	24.28	5.206E-03	.2281	6.947E-03	.3044	6.236E-03	.2732	4.275E-03
5	444(350)	25.18	24.28	5.206E-03	.2281	6.947E-03	.3044	6.236E-03	.2732	4.275E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	NEU
63	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	426.6	1270	49.02	-10.07	38.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
93.6	.066	1.976	3790	3.946E-05	7.562E-08	1.5R7E 06	2.282E-02	1.913E-02

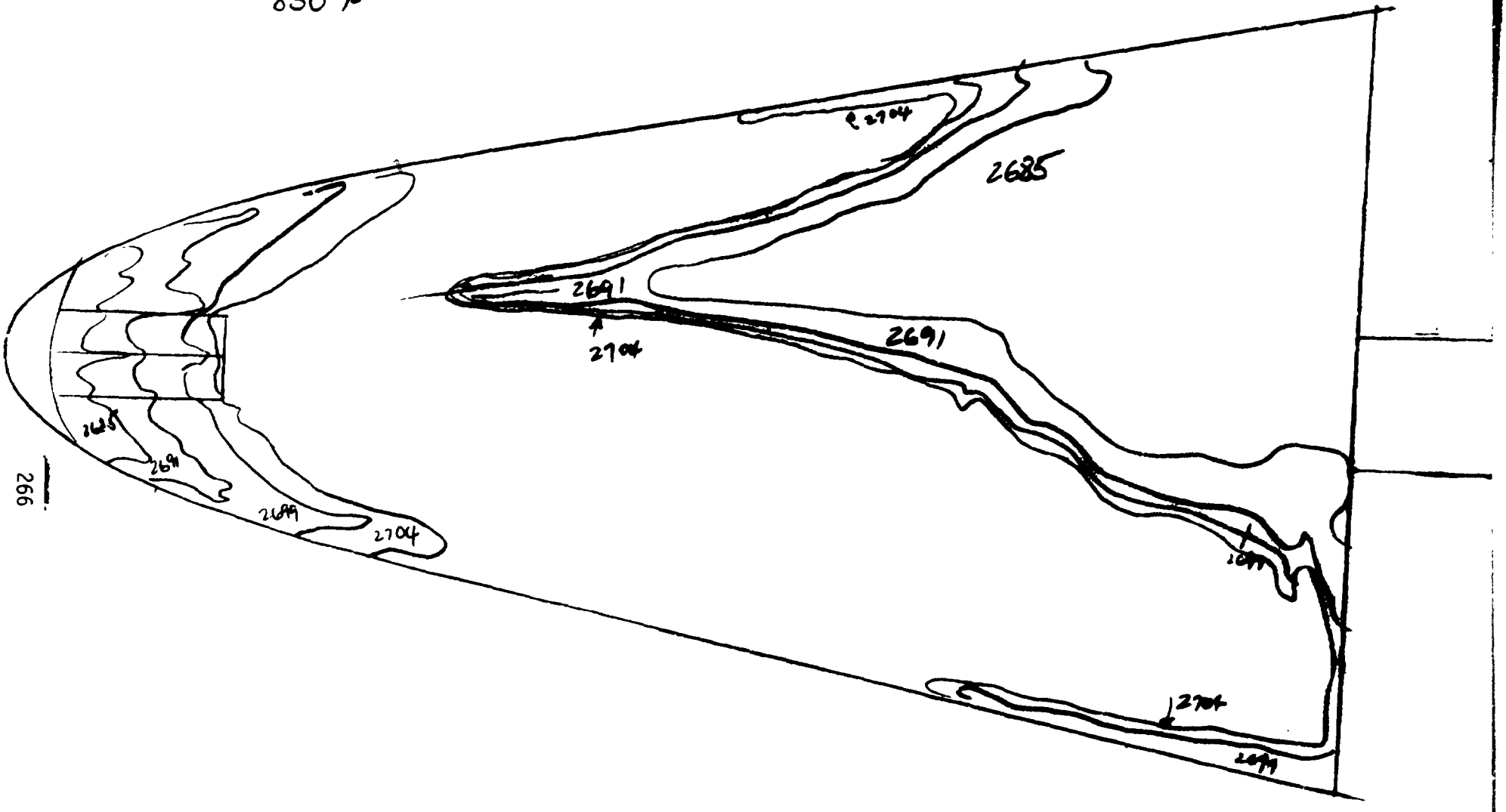
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAA)	TRAR(TO)	RETA(TO)
10F(T)	1572					
5ICF(S)	1606	350	AT	.0570	3.539E-01	4.6369E-01
56						

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)

1572
GRP64 $T_{RC} = 250°F$ $\alpha = 30°$

2676 ℄

320 PSIA
830°F



GRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	JEA	HEU
64	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	321.5	1282	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SWEF (W= .040 FT)
93.7	.034	1.505	3776	3.045E-05	7.547E-06	1.524E 06	1.990E-02	2.182E-02

CAPPA	POLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCRCAR)	TRAR(TO)	HETA(TO)
IOP(I)	1:72					
SILF(S)	1:04	250	87	.4551	2.219E-01	2.3967E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.3TO)	H(.3TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2673(250)		.08							
S	4363(250)		.50	MODEL HAS NOT REACHED CENTERLINE						
I	2676(250)		1.55	MODEL HAS NOT REACHED CENTERLINE						
S	4366(250)		1.55	MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.83							
I	2675(250)	2.63	1.73	1.034E-02	.5066	1.278E-02	.6421	1.236E-02	.6210	1.084E-02
S	4365(250)	2.63	1.73	1.034E-02	.5065	1.278E-02	.6421	1.236E-02	.6210	1.084E-02
I	2676(250)	3.70	2.80	7.845E-03	.3962	1.003E-02	.5041	9.703E-03	.4875	8.513E-03
S	4366(250)	3.70	2.80	7.845E-03	.3962	1.003E-02	.5041	9.703E-03	.4875	8.513E-03
SG			3.91							
I	2677(250)	4.78	3.88	6.703E-03	.3368	8.529E-03	.4285	8.249E-03	.4145	7.237E-03
S	4367(250)	4.78	3.88	6.703E-03	.3368	8.529E-03	.4285	8.249E-03	.4145	7.237E-03
I	2678(250)	5.86	4.96	5.931E-03	.2980	7.547E-03	.3792	7.299E-03	.3667	6.404E-03
S	4368(250)	5.86	4.96	5.931E-03	.2980	7.547E-03	.3792	7.299E-03	.3667	6.404E-03
I	2679(250)	6.93	6.03	5.376E-03	.2701	6.841E-03	.3437	6.616E-03	.3324	5.804E-03
I	2680(250)	8.06	7.13	5.365E-03	.2696	6.827E-03	.3430	6.602E-03	.3317	5.762E-03
S	4369(250)	8.03	7.13	5.365E-03	.2696	6.827E-03	.3430	6.602E-03	.3317	5.762E-03
I	2681(250)	9.09	8.19	4.934E-03	.2484	6.291E-03	.3161	6.084E-03	.3057	5.338E-03
S	4370(250)	9.09	8.19	4.934E-03	.2484	6.291E-03	.3161	6.084E-03	.3057	5.338E-03
I	2682(250)	10.16	9.24	4.616E-03	.2319	5.873E-03	.2951	5.681E-03	.2854	4.983E-03
S	4371(250)	10.16	9.24	4.616E-03	.2319	5.873E-03	.2951	5.681E-03	.2854	4.983E-03
I	2683(250)	11.24	10.34	4.349E-03	.2180	5.521E-03	.2774	5.341E-03	.2683	4.685E-03
S	4372(250)	11.24	10.34	4.349E-03	.2180	5.521E-03	.2774	5.341E-03	.2683	4.685E-03
I	2684(250)	12.31	11.41	4.107E-03	.2064	5.226E-03	.2626	5.054E-03	.2539	4.434E-03
S	4373(250)	12.31	11.41	4.107E-03	.2064	5.226E-03	.2626	5.054E-03	.2539	4.434E-03
I	2685(250)	13.39	12.49	3.900E-03	.1964	4.973E-03	.2499	4.810E-03	.2417	4.220E-03
S	4374(250)	13.39	12.49	3.900E-03	.1964	4.973E-03	.2499	4.810E-03	.2417	4.220E-03

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V41H-42A VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL A

WNCUB	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	PER	RED
64	4	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	321.5	1282	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.7	.034	1.509	3776	3.145E 05	7.547E-08	1.524E 06	1.990E-02	2.182E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCXK)	TRAR(TO)	RETA(TO)
104(T)	1572					
51L(S)	1604	250	87	.0551	2.219E-01	2.3467E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	2625(250)	13.42	12.52	3.733E-03	.1875	4.750E-03	.2386	4.594E-03	.2308	4.030E-03
5	4355(250)	13.42	12.52	3.733E-03	.1875	4.750E-03	.2386	4.594E-03	.2308	4.030E-03
1	2626(250)	14.49	13.59	3.528E-03	.1800	4.558E-03	.2290	4.406E-03	.2215	3.867E-03
5	4356(250)	14.49	13.59	3.528E-03	.1800	4.558E-03	.2290	4.406E-03	.2215	3.867E-03
1	2627(250)	15.54	14.64	3.451E-03	.1734	4.391E-03	.2206	4.247E-03	.2134	3.726E-03
5	4357(250)	15.54	14.64	3.451E-03	.1734	4.391E-03	.2206	4.247E-03	.2134	3.726E-03
5	4358(250)	16.62	15.72	3.331E-03	.1673	4.238E-03	.2129	4.094E-03	.2059	3.596E-03
1	2628(250)	16.64	15.74	3.326E-03	.1672	4.235E-03	.2128	4.096E-03	.2058	3.593E-03
1	2629(250)	17.70	16.80	3.222E-03	.1619	4.100E-03	.2060	3.965E-03	.1992	3.479E-03
5	4359(250)	17.70	16.80	3.222E-03	.1619	4.100E-03	.2060	3.965E-03	.1992	3.479E-03
1	2630(250)	18.77	17.87	3.126E-03	.1569	3.975E-03	.1997	3.844E-03	.1931	3.373E-03
5	4360(250)	18.77	17.87	3.126E-03	.1569	3.975E-03	.1997	3.844E-03	.1931	3.373E-03
1	2631(250)	19.82	18.92	3.036E-03	.1525	3.863E-03	.1941	3.738E-03	.1877	3.278E-03
5	4361(250)	19.82	18.92	3.036E-03	.1525	3.863E-03	.1941	3.738E-03	.1877	3.278E-03
1	2632(250)	20.92	20.02	2.951E-03	.1483	3.755E-03	.1887	3.632E-03	.1825	3.186E-03
5	4362(250)	20.92	20.02	2.951E-03	.1483	3.755E-03	.1887	3.632E-03	.1825	3.186E-03
1	2633(250)	21.98	21.08	2.877E-03	.1445	3.660E-03	.1839	3.540E-03	.1779	3.106E-03
5	4363(250)	21.98	21.08	2.877E-03	.1445	3.660E-03	.1839	3.540E-03	.1779	3.106E-03
1	2634(250)	23.05	22.15	2.806E-03	.1410	3.570E-03	.1794	3.453E-03	.1735	3.029E-03
5	4364(250)	23.05	22.15	2.806E-03	.1410	3.570E-03	.1794	3.453E-03	.1735	3.029E-03
1	2635(250)	24.13	23.23	2.740E-03	.1377	3.486E-03	.1752	3.372E-03	.1694	2.954E-03
5	4365(250)	24.13	23.23	2.740E-03	.1377	3.486E-03	.1752	3.372E-03	.1694	2.954E-03
1	2636(250)	25.20	24.30	2.679E-03	.1346	3.408E-03	.1712	3.296E-03	.1656	2.892E-03
5	4366(250)	25.20	24.30	2.679E-03	.1346	3.408E-03	.1712	3.296E-03	.1656	2.892E-03
1	2637(250)	26.28	25.38	2.621E-03	.1317	3.335E-03	.1676	3.226E-03	.1621	2.830E-03
5	4367(250)	26.28	25.38	2.621E-03	.1317	3.335E-03	.1676	3.226E-03	.1621	2.830E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	WER	WEU
66	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	*ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.5	1222	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	SIREF (RE .060 FT)
93.7	.034	1.526	3776	3.045E-05	7.547E-08	1.524E 06	1.493E-02	2.142E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAA)	TRAN(TO)	BETA(TO)
IDR(I)	1572					
SILF(S)	1604	250	87	.0551	2.214E-01	2.3467E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.90TO)	H(.90TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	2696(250)	27.36	25.46	2.567E-03	.1290	3.267E-03	.1641	3.159E-03	.1587	2.772E-03
S	6365(250)	27.36	25.46	2.567E-03	.1290	3.267E-03	.1641	3.159E-03	.1587	2.772E-03
1	6337(250)	29.41	27.51	2.518E-03	.1265	3.204E-03	.1610	3.094E-03	.1557	2.718E-03
1	2694(250)	29.43	27.53	2.517E-03	.1264	3.202E-03	.1609	3.047E-03	.1536	2.717E-03
1	2700(250)	29.48	27.58	2.470E-03	.1241	3.143E-03	.1579	3.040E-03	.1527	2.667E-03
S	6371(250)	29.48	27.58	2.470E-03	.1241	3.143E-03	.1579	3.040E-03	.1527	2.667E-03
1	2701(250)	30.56	29.66	2.425E-03	.1218	3.085E-03	.1550	2.984E-03	.1499	2.618E-03
S	6371(250)	30.56	29.66	2.425E-03	.1218	3.085E-03	.1550	2.984E-03	.1499	2.618E-03
1	2702(250)	31.64	30.74	2.382E-03	.1197	3.031E-03	.1523	2.931E-03	.1473	2.572E-03
S	6372(250)	31.64	30.74	2.382E-03	.1197	3.031E-03	.1523	2.931E-03	.1473	2.572E-03
1	2703(250)	32.71	31.81	2.341E-03	.1176	2.979E-03	.1497	2.881E-03	.1448	2.528E-03
S	6373(250)	32.71	31.81	2.341E-03	.1176	2.979E-03	.1497	2.881E-03	.1448	2.528E-03
1	2704(250)	33.76	32.86	2.300E-03	.1157	2.931E-03	.1473	2.835E-03	.1424	2.487E-03
S	6374(250)	33.76	32.86	2.300E-03	.1157	2.931E-03	.1473	2.835E-03	.1424	2.487E-03
1	2705(250)	34.84	33.94	2.267E-03	.1139	2.886E-03	.1449	2.790E-03	.1402	2.447E-03
S	6375(250)	34.84	33.94	2.267E-03	.1139	2.886E-03	.1449	2.790E-03	.1402	2.447E-03
1	2706(250)	35.92	35.02	2.232E-03	.1121	2.840E-03	.1427	2.746E-03	.1380	2.409E-03
S	6376(250)	35.92	35.02	2.232E-03	.1121	2.840E-03	.1427	2.746E-03	.1380	2.409E-03
1	2707(250)	36.99	35.09	2.197E-03	.1104	2.797E-03	.1405	2.705E-03	.1359	2.373E-03
S	6377(250)	36.99	35.09	2.197E-03	.1104	2.797E-03	.1405	2.705E-03	.1359	2.373E-03
1	2708(250)	38.07	37.17	2.166E-03	.1088	2.758E-03	.1385	2.666E-03	.1339	2.339E-03
S	6378(250)	38.07	37.17	2.166E-03	.1088	2.758E-03	.1385	2.666E-03	.1339	2.339E-03
1	2709(250)	39.15	38.25	2.135E-03	.1073	2.717E-03	.1365	2.626E-03	.1320	2.305E-03
S	6379(250)	39.15	38.25	2.135E-03	.1073	2.717E-03	.1365	2.626E-03	.1320	2.305E-03
		39.52		MODEL HAS LEFT CENTERLINE						

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	MEB
66	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG K)	ALPHA-MODEL	ALPHA-SELTON	ALPHA-PREBEND	ROLL-MODEL	YAW
7.96	321.5	1282	30.00	-.00	30.00	0	0

T-INF (DEG K)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
93.7	.036	1.509	3776	3.045E-05	7.567E-06	1.524E 06	1.990E-02	2.182E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
10F(T)	1572					
SIDE(S)	1604	250	87	.0551	2.719E-01	2.3967E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	2710(250)	40.22	39.32	2.1[illegible]E-03	.1054	2.680E-03	.1346	2.592E-03	.1302	2.274E-03
5	4340(250)	40.22	39.32	2.1[illegible]E-03	.1054	2.680E-03	.1346	2.592E-03	.1302	2.274E-03
1	2711(250)	41.30	40.42	2.07[illegible]E-03	.1044	2.644E-03	.1328	2.557E-03	.1285	2.243E-03
5	4341(250)	41.30	40.42	2.07[illegible]E-03	.1044	2.644E-03	.1328	2.557E-03	.1285	2.243E-03
1	2712(250)	42.37	41.47	2.031E-03	.1030	2.609E-03	.1311	2.523E-03	.1268	2.214E-03
5	4342(250)	42.37	41.47	2.031E-03	.1030	2.609E-03	.1311	2.523E-03	.1268	2.214E-03
1	2713(250)	43.45	42.55	2.024E-03	.1017	2.576E-03	.1294	2.491E-03	.1252	2.186E-03
5	4343(250)	43.45	42.55	2.024E-03	.1017	2.576E-03	.1294	2.491E-03	.1252	2.186E-03
1	2714(250)	44.53	43.63	1.999E-03	.1005	2.544E-03	.1278	2.460E-03	.1236	2.159E-03
5	4344(250)	44.53	43.63	1.999E-03	.1005	2.544E-03	.1278	2.460E-03	.1236	2.159E-03

1572

GP 65
Tpc 300
Po 32c
To 830

$\alpha = 40°$

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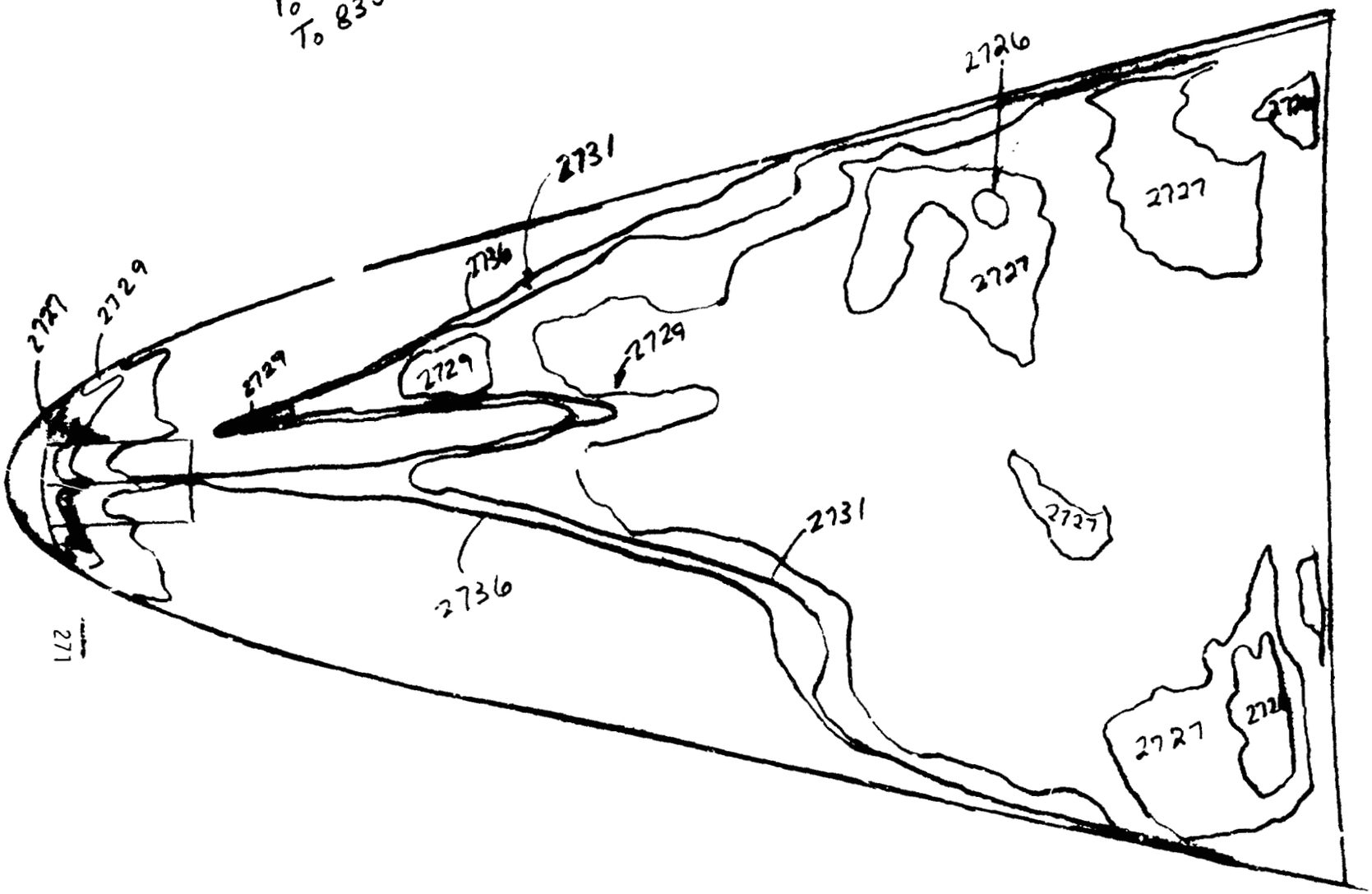


V41H-824

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HED
65	5	PROTO-ERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	321.0	1266	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .060 FT)	STREF (IN= .060 FT)
96.	.034	1.513	3783	3.036E-05	7.574E-08	1.817E 06	1.993E-02	2.186E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
10F(T)	1572					
>ILE(S)	1694	300	87	.0568	2.881E-01	3.3341E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	2716(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	4396(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	2717(400)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	4397(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.90								
I	2718(300)	2.60	1.70	1.033E-02	.7292	1.888E-02	.9477	1.713E-02	.8598	1.566E-02
>	4398(400)	2.60	1.70	1.033E-02	.7292	1.888E-02	.9477	1.713E-02	.8598	1.566E-02
I	2719(300)	3.68	2.78	1.138E-02	.5709	1.478E-02	.7419	1.341E-02	.6731	1.226E-02
>	4399(300)	3.68	2.78	1.138E-02	.5709	1.478E-02	.7419	1.341E-02	.6731	1.226E-02
>G		3.9								
I	2720(300)	4.76	3.84	9.655E-03	.4847	1.255E-02	.6299	1.139E-02	.5715	1.041E-02
>	4399(300)	4.76	3.84	9.655E-03	.4847	1.255E-02	.6299	1.139E-02	.5715	1.041E-02
I	2721(400)	5.81	4.91	8.522E-03	.4297	1.113E-02	.5584	1.009E-02	.5066	9.225E-03
>	4391(300)	5.81	4.91	8.522E-03	.4297	1.113E-02	.5584	1.009E-02	.5066	9.225E-03
I	2722(300)	6.91	5.01	7.737E-03	.3883	1.005E-02	.5046	9.123E-03	.4579	8.337E-03
>	4392(400)	6.91	5.01	7.737E-03	.3883	1.005E-02	.5046	9.123E-03	.4579	8.337E-03
I	2723(300)	7.98	7.08	7.165E-03	.3576	9.260E-03	.4647	8.401E-03	.4216	7.677E-03
>	4393(300)	7.98	7.08	7.165E-03	.3576	9.260E-03	.4647	8.401E-03	.4216	7.677E-03
I	2724(300)	9.06	8.16	6.639E-03	.3332	8.628E-03	.4330	7.828E-03	.3929	7.153E-03
>	4394(400)	9.06	8.16	6.639E-03	.3332	8.628E-03	.4330	7.828E-03	.3929	7.153E-03
I	2725(400)	10.14	9.24	6.240E-03	.3132	8.110E-03	.4070	7.358E-03	.3693	6.724E-03
>	4395(300)	10.14	9.24	6.240E-03	.3132	8.110E-03	.4070	7.358E-03	.3693	6.724E-03
I	2726(300)	11.21	10.31	5.906E-03	.2964	7.675E-03	.3852	6.963E-03	.3495	6.363E-03
>	4396(300)	11.21	10.31	5.906E-03	.2964	7.675E-03	.3852	6.963E-03	.3495	6.363E-03
>	4397(400)	12.26	11.36	5.626E-03	.2824	7.311E-03	.3669	6.633E-03	.3329	6.062E-03
I	2727(400)	1 .29	11.39	5.620E-03	.2820	7.303E-03	.3665	6.626E-03	.3326	6.055E-03

GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE				THIP LOCATION/SIZE		REF	REU
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
5X	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.8	1286	34.98	-0.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	WREF (W= .040 FT)	STREF (W= .060 FT)
94.1	.236	1.510	3783	3.336E-05	7.574E-06	1.517E 06	1.993E-02	2.188E-02

CAPPHA (DEG F)	HULL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TBAR(TO)	BETA(TO)
	1572					
STEEL(S)	1004	300	97	.0569	2.881E-01	3.3391E-01
SG						

RF	X	TIME	DELTA-E	H(TO)	H(TO)/HWEF	H(.9TO)	H(.9TO)/HWEF	H(.934TO)	H(.934TO)/HREF	ST(TO)
S	4 (300)	14.34	12.44	5.377E-03	.2699	6.958E-03	.3507	6.340E-03	.3182	5.794E-03
T	2[illegible] (300)	14.37	14.47	5.372E-03	.2696	6.961E-03	.3503	6.334E-03	.3179	5.780E-03
T	2724(300)	14.42	14.52	5.159E-03	.2589	6.704E-03	.3365	6.082E-03	.3053	5.554E-03
S	4[illegible](300)	14.42	14.52	5.159E-03	.2589	6.704E-03	.3365	6.082E-03	.3053	5.558E-03
S	4[illegible](300)	14.49	14.58	4.905E-03	.2492	6.452E-03	.3278	5.854E-03	.2936	5.349E-03
T	273 (300)	14.52	14.62	4.920E-03	.2490	6.448E-03	.3235	5.849E-03	.2935	5.345E-03
T	2731(300)	14.57	15.67	4.7[illegible]E-03	.2465	6.226E-03	.3125	5.644E-03	.26[illegible]	5.162E-03
S	4[illegible](300)	14.57	15.67	4.71E-03	.2405	6.226E-03	.3125	5.644E-03	.28	5.162E-03
T	2732(300)	17.65	16.75	4.935E-03	.2326	6.023E-03	.3023	5.465E-03	.2743	4.994E-03
S	4[illegible](300)	17.65	16.75	4.935E-03	.2326	6.023E-03	.3023	5.465E-03	.2743	4.994E-03
T	2[illegible](300)	17.76	17.82	4.493E-03	.2255	5.838E-03	.2930	5.297E-03	.2658	4.841E-03
S	4[illegible](300)	17.72	17.85	4.493E-03	.2255	5.838E-03	.2930	5.297E-03	.2658	4.841E-03
T	3[illegible](300)	[illegible]	18.90	4.303E-03	.2190	5.670E-03	.2845	5.144E-03	.2582	4.701E-03
S	4[illegible]	[illegible]	18.9[illegible]	4.302E-03	.2190	5.670E-03	.2845	5.144E-03	.2582	4.701E-03
T	273[illegible]	[illegible]	19.97	4.244E-03	.2130	5.515E-03	.2768	5.004E-03	.2511	4.572E-03
S	4[illegible](300)	[illegible]	19.97	4.244E-03	.2130	5.515E-03	.2768	5.004E-03	.2511	4.572E-03
T	273[illegible]	[illegible]	21.05	4.134E-03	.2075	5.372E-03	.2696	4.874E-03	.2446	4.454E-03
S	4[illegible](300)	[illegible]	21.05	4.134E-03	.2075	5.372E-03	.2696	4.874E-03	.2446	4.454E-03
T	2737(300)	23.13	22.17	4.032E-03	.2024	5.240E-03	.2630	4.754E-03	.2386	4.344E-03
S	4407(300)	23.13	22.17	4.032E-03	.2024	5.240E-03	.2630	4.754E-03	.2386	4.344E-03
T	273 (300)	24.13	23.25	[illegible]37E-03	.1976	5.117E-03	.2568	4.642E-03	.2330	4.242E-03
S	4[illegible](300)	24.10	23.2[illegible]	[illegible]37E-03	.1976	5.117E-03	.2568	4.642E-03	.2330	4.242E-03
T	2[illegible](300)	25.18	24.3[illegible]	[illegible]98E-03	.1932	5.002E-03	.2510	4.538E-03	.2276	4.147E-03
S	4[illegible](300)	25.18	24.3[illegible]	[illegible]98E-03	.1932	5.002E-03	.2510	4.538E-03	.2276	4.147E-03
T	2[illegible](300)	26.25	25.34	3.767E-03	.1890	4.895E-03	.2457	4.441E-03	.2229	4.058E-03
S	4[illegible](300)	26.25	25.34	3.767E-03	.1890	4.895E-03	.2457	4.441E-03	.2229	4.058E-03

GROUP CONFIG *** MODEL DESCRIPTION *** GAP LOCATION/SIZE A/L WIDTH TRIP LOCATION/SIZE TYPE A/L DIA. REB MEO

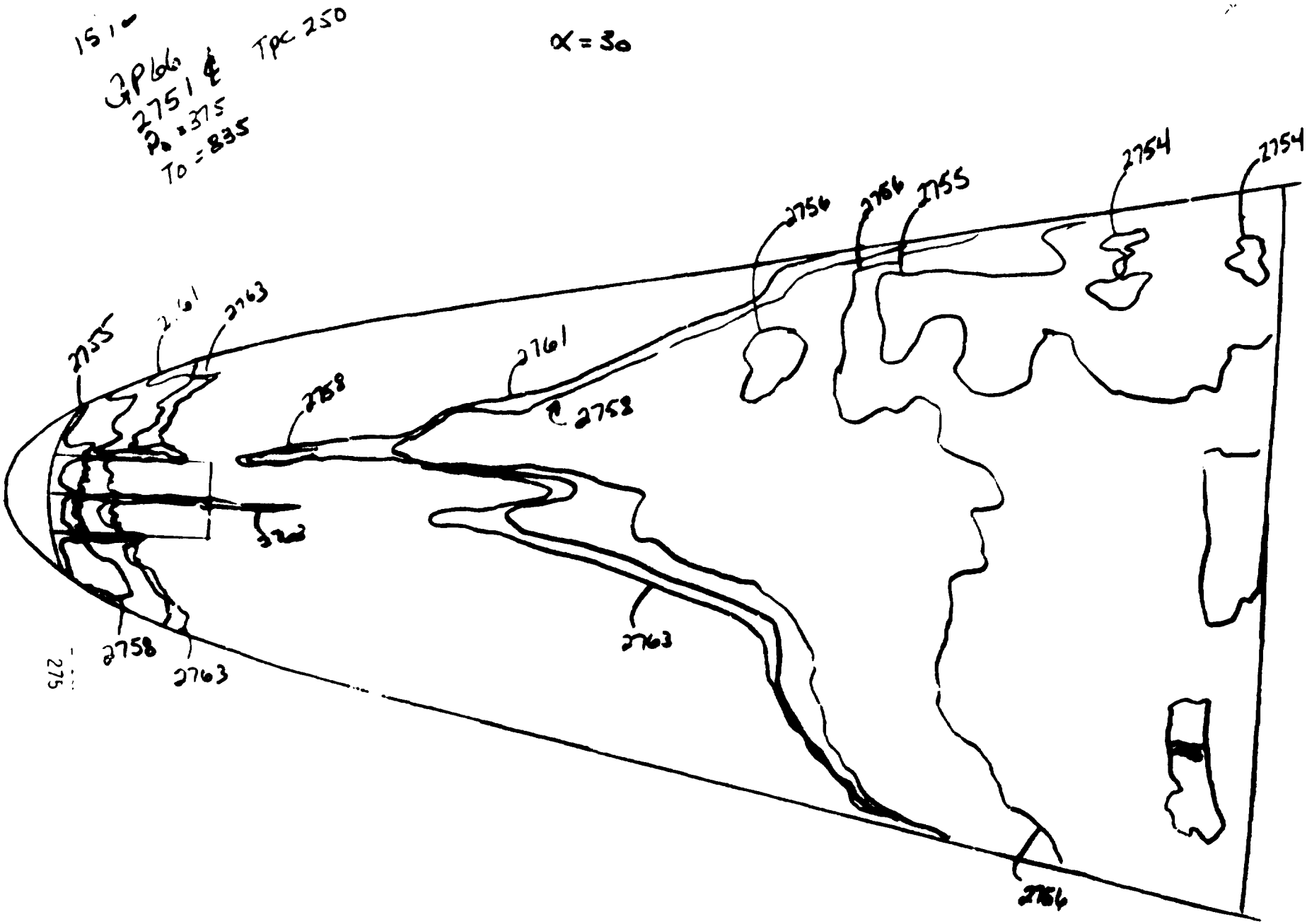
65 5 FRITOHEMANCE W/SIMULATED LANDING GEAR DOOR

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA PITCH	ALPHA-PHEHENL	ROLL-MODEL	YAW
7.96	921.8	1266	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
94.1	.036	1.510	3783	3.036E-05	7.574E-06	1.476E 06	1.491E-02	2.184E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACRA)	TRANI(TO)	BETA(TO)
10P(T)	1572					
SIDE(S)	1604	300	87	.0568	2.841E-01	3.3391E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	SF(TO)
1	2761(302)	27.33	26.43	3.6645E-03	.1851	4.7946E-03	.2406	4.3526E-03	.2183	3.975E-03
5	4611(302)	27.33	26.43	3.6645E-03	.1851	4.7946E-03	.2406	4.3526E-03	.2183	3.975E-03
		2.26		MODEL HAS LEFT CENTERLINE						
1	2762(302)	28.41	27.51	3.8105E-03	.1915	4.6996E-03	.2356	4.2605E-03	.2140	3.854E-03
5	4612(302)	28.41	27.51	3.8105E-03	.1915	4.6996E-03	.2356	4.2605E-03	.2140	3.854E-03
1	2763(302)	29.48	28.54	3.5076E-03	.1760	4.6106E-03	.2314	4.1836E-03	.2099	3.822E-03
5	4613(302)	29.48	28.54	3.5076E-03	.1760	4.6106E-03	.2314	4.1836E-03	.2099	3.822E-03
1	2764(302)	30.56	29.64	3.4028E-03	.1708	4.5266E-03	.2271	4.1086E-03	.2061	3.752E-03
5	4614(302)	30.56	29.64	3.4028E-03	.1708	4.5266E-03	.2271	4.1086E-03	.2061	3.752E-03
1	2765(302)	31.64	30.74	3.4218E-03	.1717	4.4466E-03	.2231	4.0346E-03	.2024	3.686E-03
5	4615(302)	31.64	30.74	3.4218E-03	.1717	4.4466E-03	.2231	4.0346E-03	.2024	3.686E-03
1	2766(302)	32.71	31.81	3.3638E-03	.1688	4.3706E-03	.2193	3.9656E-03	.1990	3.623E-03
5	4616(302)	32.71	31.81	3.3638E-03	.1688	4.3706E-03	.2193	3.9656E-03	.1990	3.623E-03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V41H-42A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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NROLL CON IG *** MODEL DESCRIPTION ***

			DAM LOCATION/SIZE			TRIP LOCATION/SIZE			HEA	HED
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
66	6	FUSELAGE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-REFERENCE	ROLL-MODEL	YAW
7.97	375.1	1260	30.00	-.00	30.00	0	0

T-INF (DEG F)	P-INF (PSIA)	Z-INF (DIMS)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (INR .040 FT)	SIREF (INR .040 FT)
93.5	.019	1.751	3763	3.519E-05	7.550E-09	1.675E-06	2.145E-02	2.030E-02

CAPPLA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUZHR HEAT (BTU/FT2/SEC)	THAW(TO)	HETA(TO)
(DEG F)	1272					
SIEC(S)	1.00	250	47	.0581	2.205E-01	2.377BE-01
56						

	PIC NO	TIME (SECTIME)	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	276(250)	.05	MODEL HAS NOT REACHED CENTERLINE						
5	661(250)	.05	MODEL HAS NOT REACHED CENTERLINE						
1	276(250)	1.53	MODEL HAS NOT REACHED CENTERLINE						
5	661(250)	1.53	MODEL HAS NOT REACHED CENTERLINE						
INSPECT TIME =		1.6							
5	662(250)	.08	1.63	1.211E-02	.6716	1.285E-02	.5992	1.243E-02	.4796	9.625E-03
1	275(250)	.08	1.74	1.000E-02	.6773	1.276E-02	.5948	1.233E-02	.4753	9.355E-03
1	275(250)	.08	1.74	7.8[illegible]E-03	.3483	9.944E-03	.4456	9.844E-03	.4534	7.324E-03
5	662(250)	.08	1.74	7.8[illegible]E-03	.3483	9.944E-03	.4456	9.852E-03	.4504	7.324E-03
5G		1.61								
1	275(250)	.73	1.83	5.9[illegible]E-03	.3120	8.504E-03	.3966	8.237E-03	.3436	6.239E-03
5	662(250)	.73	1.83	5.7[illegible]E-03	.3120	8.504E-03	.3966	8.237E-03	.3436	6.239E-03
1	275(250)	1.61	4.41	5.714E-03	.2757	7.518E-03	.3505	7.272E-03	.3340	5.512E-03
5	662(250)	1.61	4.41	5.714E-03	.2757	7.518E-03	.3505	7.272E-03	.3340	5.512E-03
1	275(250)	1.68	4.43	5.326E-03	.2497	6.809E-03	.3174	6.5[illegible]0E-03	.3070	4.992E-03
5	662(250)	1.68	4.43	5.326E-03	.2497	6.809E-03	.3174	6.5[illegible]E-03	.3070	4.992E-03
1	275(250)	7.08	7.08	4.931E-03	.2299	6.208E-03	.2922	6.063E-03	.2626	4.596E-03
5	662(250)	7.08	7.08	4.931E-03	.2299	6.208E-03	.2922	6.063E-03	.2626	4.596E-03
1	275(250)	9.61	9.11	4.650E-03	.2146	5.8[illegible]8E-03	.2726	5.655E-03	.2437	4.264E-03
1	275(250)	9.64	9.14	4.5[illegible]3E-03	.2141	5.419E-03	.2772	5.663E-03	.2433	4.281E-03
5	662(250)	11.11	9.21	4.317E-03	.2012	5.087E-03	.2558	5.304E-03	.2474	4.023E-03
1	275(250)	11.11	9.21	4.317E-03	.2012	5.087E-03	.2558	5.304E-03	.2474	4.023E-03
5	662(250)	11.16	1.24	4.0[illegible]0E-03	.1905	5.199E-03	.2623	5.02[illegible]E-03	.2344	3.812E-03
1	275(250)	11.16	1.24	4.0[illegible]0E-03	.1905	5.199E-03	.2623	5.02[illegible]E-03	.2344	3.812E-03
1	275(250)	12.64	11.31	3.6[illegible]1E-03	.1914	4.394E-03	.2305	4.7[illegible]E-03	.2230	3.626E-03
5	662(250)	12.64	11.31	3.6[illegible]1E-03	.1914	4.946E-03	.2305	4.7[illegible]E-03	.2230	3.626E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	MED
66	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	375.1	1286	36.00	-.09	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
93.9	.039	1.741	3783	3.5198E-05	7.5508E-08	1.762E 06	2.145E-02	2.030E-02

CAMERA (OF(I))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRA(ITO)	RETA(ITO)
	1572					
SILE(S)	1604	250	97	.0591	2.205E-01	2.377BE-01
56						

	PIC NO	TIME	DELTIME	H(ITO)	H(ITO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(ITO)
1	2760(250)	13.32	12.62	2.7[illegible]E-03	.1733	4.727E-03	.2203	4.572E-03	.2131	3.465E-03
5	4430(250)	13.32	12.62	3.71[illegible]E-03	.1733	4.727E-03	.2203	4.572E-03	.2131	3.465E-03
1	2761(250)	14.29	13.49	3.5[illegible]7E-03	.1663	4.534E-03	.2114	4.3[illegible]5E-03	.2044	3.324E-03
5	4431(250)	14.29	13.49	3.5[illegible]7E-03	.1663	4.534E-03	.2114	4.[illegible]46E-03	.2044	3.324E-03
1	2762(250)	15.47	14.67	3.433E-03	.1600	4.363E-03	.2034	4.221E-03	.1967	3.199E-03
5	4432(250)	15.47	14.67	3.433E-03	.1600	4.363E-03	.2034	4.221E-03	.1967	3.199E-03
1	2763(250)	16.54	15.64	3.312E-03	.1544	4.211E-03	.1963	4.073E-03	.1899	3.087E-03
5	4433(250)	16.54	15.64	3.312E-03	.1544	4.211E-03	.1963	4.073E-03	.1899	3.087E-03
1	2764(250)	17.62	16.72	3.204E-03	.1494	4.073E-03	.1899	3.9[illegible]E-03	.1836	2.986E-03
5	4434(250)	17.62	16.72	3.204E-03	.1494	4.073E-03	.1899	3.9[illegible]E-03	.1836	2.986E-03
1	2765(250)	18.70	17.80	3.106E-03	.1448	3.948E-03	.1840	3.814E-03	.1780	2.895E-03
5	4435(25	18.70	17.80	3.106E-03	.1448	3.948E-03	.1840	3.814E-03	.1780	2.895E-03
		13.32		MODEL HAS LEFT CENTERLINE						
1	2766(250)	19.77	18.87	3.015E-03	.1406	3.836E-03	.1787	3.708E-03	.1729	2.811E-03
5	4436(250)	19.77	18.87	3.015E-03	.1406	3.836E-03	.1787	3.708E-03	.1729	2.811E-03
1	2767(250)	20.85	19.95	2.933E-03	.1367	3.729E-03	.1738	3.607E-03	.1681	2.734E-03
5	4437(250)	20.85	19.95	2.933E-03	.1367	3.729E-03	.1738	3.607E-03	.1681	2.734E-03
1	2768(250)	21.93	21.03	2.857E-03	.1332	3.632E-03	.1693	3.51[illegible]E-03	.1638	2.663E-03
5	4438(250)	21.93	21.03	2.857E-03	.1332	3.632E-03	.1693	3.51[illegible]E-03	.1638	2.663E-03
1	2769(250)	23.00	22.10	2.7[illegible]7E-03	.1299	3.543E-03	.1651	3.427E-03	.1597	2.597E-03
5	4439(250)	23.00	22.10	2.7[illegible]7E-03	.1299	3.543E-03	.1651	3.427E-03	.1597	2.597E-03

GP 67 1572
2774 ℄

TPC 250
To 265
Po 820

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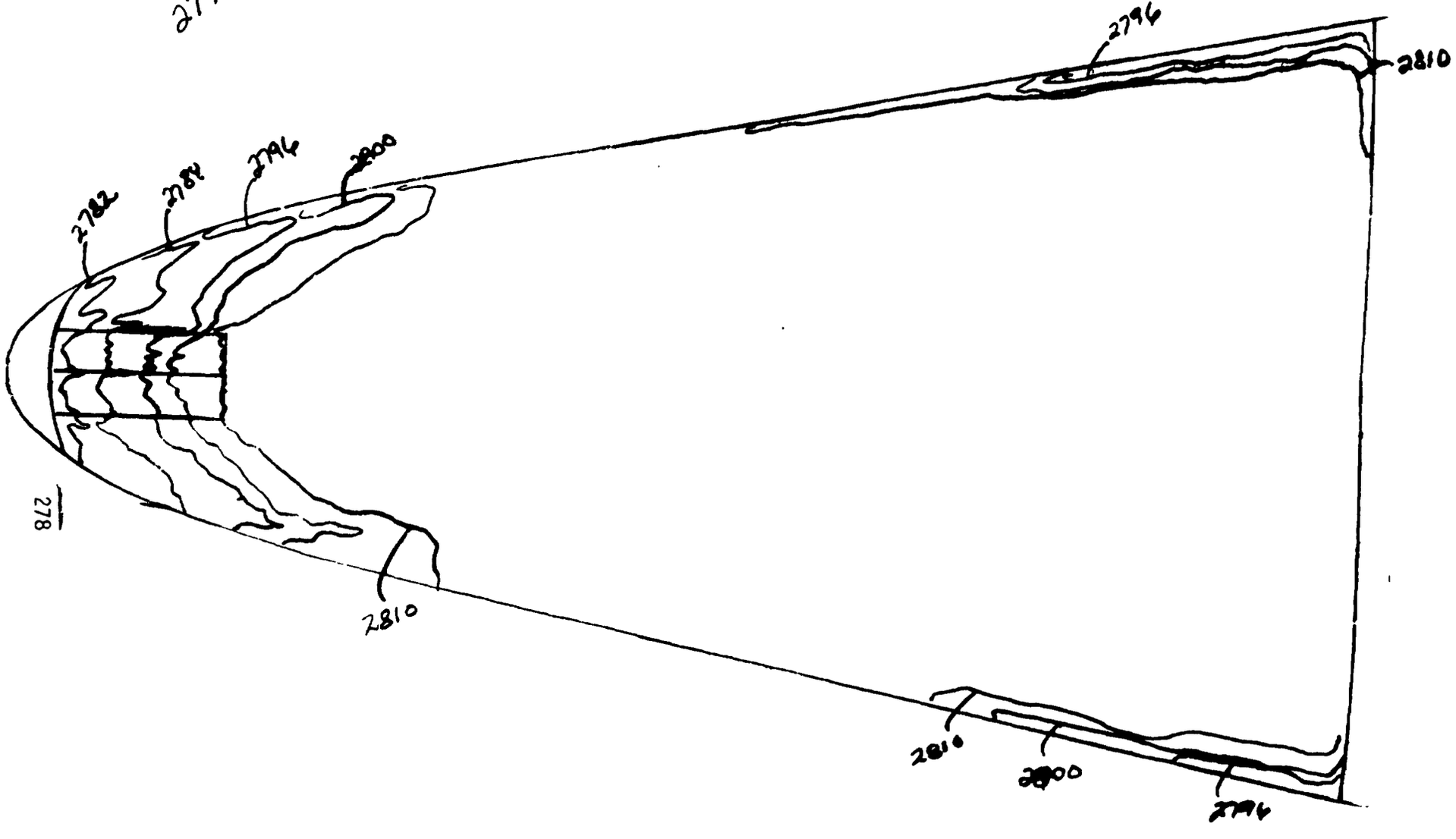

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V61M-d2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

RUN	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	WER	WEO
67	5	FRONTIERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREWEND	ROLL-MODEL	YAW
7.95	265.5	1279	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .060 FT)	STREF (IN= .060 FT)
93.7	.028	1.253	3772	2.435E-05	7.547E-08	1.267E 06	1.813E-02	2.390E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TBAR(TO)	BETA(TO)
(OF(T)	1572					
SIDE(S)	1e04	250	90	.0551	2.234E-01	2.4224E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2771(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
S	4441(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	2772(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4442(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	2773(250)	2.63	1.71	1.019E-02	.5622	1.248E-02	.7154	1.255E-02	.6923	1.323E-02
S	4443(250)	2.63	1.71	1.019E-02	.5622	1.248E-02	.7154	1.255E-02	.6923	1.323E-02
I	2774(250)	3.70	2.79	7.995E-03	.4405	1.019E-02	.5612	9.834E-03	.5426	1.037E-02
S	4444(250)	3.70	2.79	7.995E-03	.4405	1.019E-02	.5612	9.834E-03	.5426	1.037E-02
SG			3.95							
I	2775(250)	4.78	3.87	6.745E-03	.3763	8.666E-03	.4767	8.359E-03	.4610	8.813E-03
S	4445(250)	4.78	3.87	6.745E-03	.3763	8.666E-03	.4767	8.359E-03	.4610	8.813E-03
I	2776(250)	5.86	4.96	6.045E-03	.3311	7.645E-03	.4216	7.343E-03	.4077	7.765E-03
S	4446(250)	5.86	4.96	6.045E-03	.3311	7.645E-03	.4216	7.343E-03	.4077	7.765E-03
I	2777(250)	6.96	6.06	5.429E-03	.2994	6.916E-03	.3813	6.686E-03	.3687	7.049E-03
S	4447(250)	6.96	6.06	5.429E-03	.2994	6.916E-03	.3813	6.686E-03	.3687	7.049E-03
I	2778(250)	8.01	7.15	5.011E-03	.2763	6.341E-03	.3519	6.171E-03	.3403	6.506E-03
S	4448(250)	8.01	7.15	5.011E-03	.2763	6.341E-03	.3519	6.171E-03	.3403	6.506E-03
I	2779(250)	9.09	8.17	4.664E-03	.2575	5.944E-03	.3279	5.750E-03	.3171	6.062E-03
S	4449(250)	9.09	8.17	4.664E-03	.2575	5.944E-03	.3279	5.750E-03	.3171	6.062E-03
I	2780(250)	10.16	9.25	4.364E-03	.2421	5.540E-03	.3043	5.405E-03	.2981	5.699E-03
S	4450(250)	10.16	9.25	4.364E-03	.2421	5.540E-03	.3043	5.405E-03	.2981	5.699E-03
I	2781(250)	11.24	10.33	4.146E-03	.2288	5.246E-03	.2914	5.109E-03	.2818	5.387E-03
S	4451(250)	11.26	10.33	4.146E-03	.2288	5.246E-03	.2914	5.109E-03	.2818	5.387E-03
I	2782(250)	12.34	11.43	3.946E-03	.2178	5.029E-03	.2773	4.863E-03	.2682	5.127E-03
S	4452(250)	12.34	11.43	3.946E-03	.2178	5.029E-03	.2773	4.863E-03	.2682	5.127E-03

V614-B2A

DRCUT	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	RED
67	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRELEND	ROLL-MODEL	YAW
7.95	265.5	1279	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	SREF
93.7	.028	1.253	3772	2.595E-05	7.547E-08	1.267E 06	1.813E-02 (R= .060 FT)	2.390E-02 (R= .060 FT)

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOKCAK)	TRAN(T1)	BETA(TO)
106(T)	1:72					
SICE(S)	1:04	250	26	.0551	2.239E-01	2.6224E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	2783(250)	13.42	12.51	3.775E-03	.2082	[illegible]E-03	.2651	4.694E-03	.2564	4.901E-03
5	4452(250)	13.42	12.51	3.775E-03	.208[illegible]	4.817E-03	.2651	4.694E-03	.2564	4.901E-03
1	2784(250)	14.47	13.55	3.626E-03	.2000	4.617E-03	.2546	4.465E-03	.2462	4.707E-03
5	4453(250)	14.47	13.55	3.626E-03	.2000	4.617E-03	.2546	4.465E-03	.2462	4.707E-03
1	2785(250)	15.57	14.65	3.467E-03	.1923	4.409E-03	.2443	4.294E-03	.2368	4.527E-03
5	4454(250)	15.57	14.65	3.467E-03	.1923	4.409E-03	.2443	4.294E-03	.2368	4.527E-03
1	2786(250)	16.62	15.71	3.305E-03	.1857	4.298E-03	.2366	4.144E-03	.2287	4.373E-03
5	4455(250)	16.62	15.71	3.305E-03	.1857	4.298E-03	.2366	4.144E-03	.2287	4.373E-03
1	2787(250)	17.70	16.79	3.255E-03	.1797	4.149E-03	.2288	4.012E-03	.2213	4.230E-03
5	4457(250)	17.70	16.79	3.255E-03	.1797	4.149E-03	.2288	4.012E-03	.2213	4.230E-03
1	2788(250)	18.77	17.84	3.125E-03	.1742	4.022E-03	.2218	3.890E-03	.2145	4.101E-03
5	4458(250)	18.77	17.84	3.125E-03	.1742	4.022E-03	.2218	3.890E-03	.2145	4.101E-03
1	2789(250)	19.85	18.93	3.007E-03	.1692	3.905E-03	.2154	3.776E-03	.2083	3.983E-03
5	4459(250)	19.85	18.93	3.007E-03	.1692	3.905E-03	.2154	3.776E-03	.2083	3.983E-03
1	2790(250)	20.92	20.01	2.945E-03	.1646	3.800E-03	.2096	3.675E-03	.2027	3.874E-03
5	4460(250)	20.92	20.01	2.945E-03	.1646	3.800E-03	.2096	3.675E-03	.2027	3.874E-03
1	2791(250)	22.00	21.09	2.907E-03	.1603	3.722E-03	.2042	3.580E-03	.1974	3.776E-03
5	4461(250)	22.00	21.09	2.907E-03	.1603	3.722E-03	.2042	3.580E-03	.1974	3.776E-03
1	2792(250)	23.08	22.16	2.835E-03	.1564	3.611E-03	.1991	3.492E-03	.1926	3.681E-03
5	4462(250)	23.08	22.16	2.835E-03	.1564	3.611E-03	.1991	3.492E-03	.1926	3.681E-03
1	2793(250)	24.15	23.24	2.769E-03	.1527	3.526E-03	.1945	3.410E-03	.1880	3.595E-03
5	4463(250)	24.15	23.24	2.769E-03	.1527	3.526E-03	.1945	3.410E-03	.1880	3.595E-03
1	2794(250)	25.23	24.32	2.707E-03	.1493	3.447E-03	.1901	3.333E-03	.1838	3.514E-03
5	4464(250)	25.23	24.32	2.707E-03	.1493	3.447E-03	.1901	3.333E-03	.1838	3.514E-03
1	2795(250)	26.31	25.39	2.649E-03	.1461	3.373E-03	.1860	3.262E-03	.1799	3.439E-03
5	4465(250)	26.31	25.39	2.649E-03	.1461	3.373E-03	.1860	3.262E-03	.1799	3.439E-03

RUNCOD	CONFIG	*** DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEA	HEU
67	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENO	ROLL-MODEL	YAW
7.95	265.5	1270	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .060 FT)	STREF (RE .060 FT)
93.7	.028	1.253	3772	2.535E-05	7.567E-08	1.267E 06	1.413E-02	2.390E-02

GAMMA	OLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (GMCRCXP)	TRAN(TO)	BETA(TO)
10R(T)	1572					
SIDE(S)	1604	25	86	.0551	2.239E-01	2.6224E-01
56						

	PIC NO	TIME	(ELTIME	M(10)	M(TO)/MREF	M(.910)	M(.9TO)/MREF	M(.912TO)	M(.912TO)/MREF	ST(10)
1	2795(250)	27.38	26.47	2.594E-03	.1431	3.304E-03	.1822	3.195E-03	.1762	3.369E-03
5	4466(250)	27.38	26.47	2.594E-03	.1431	3.304E-03	.1822	3.195E-03	.1762	3.369E-03
1	2797(250)	28.46	27.54	2.563E-03	.1403	3.234E-03	.1786	3.132E-03	.1727	3.307E-03
5	4467(250)	28.46	27.54	2.563E-03	.1403	3.234E-03	.1786	3.132E-03	.1727	3.307E-03
1	2798(250)	29.53	28.62	2.495E-03	.1376	3.177E-03	.1752	3.073E-03	.1696	3.239E-03
5	4468(250)	29.53	28.62	2.495E-03	.1376	3.177E-03	.1752	3.073E-03	.1696	3.239E-03
1	2799(250)	30.61	29.70	2.449E-03	.1351	3.119E-03	.1720	3.016E-03	.1664	3.180E-03
5	4469(250)	30.61	29.70	2.449E-03	.1351	3.119E-03	.1720	3.016E-03	.1664	3.180E-03
1	2800(250)	31.69	30.77	2.406E-03	.1327	3.064E-03	.1690	2.963E-03	.1634	3.124E-03
5	4470(250)	31.69	30.77	2.406E-03	.1327	3.064E-03	.1690	2.963E-03	.1634	3.124E-03
1	2801(250)	32.76	31.85	2.365E-03	.1304	3.012E-03	.1661	2.913E-03	.1606	3.071E-03
5	4471(250)	32.76	31.85	2.365E-03	.1304	3.012E-03	.1661	2.913E-03	.1606	3.071E-03
1	2802(250)	33.81	32.90	2.327E-03	.1283	2.964E-03	.1634	2.866E-03	.1580	3.021E-03
5	4472(250)	33.81	32.90	2.327E-03	.1283	2.964E-03	.1634	2.866E-03	.1580	3.021E-03
1	2803(250)	34.92	34.00	2.289E-03	.1262	2.915E-03	.1608	2.819E-03	.1555	2.972E-03
5	4473(250)	34.92	34.00	2.289E-03	.1262	2.915E-03	.1608	2.819E-03	.1555	2.972E-03
1	2804(250)	35.97	35.05	2.254E-03	.1243	2.871E-03	.1583	2.775E-03	.1531	2.927E-03
5	4474(250)	35.97	35.05	2.254E-03	.1243	2.871E-03	.1583	2.775E-03	.1531	2.927E-03
1	2805(250)	37.04	36.13	2.221E-03	.1225	2.828E-03	.1560	2.735E-03	.1508	2.883E-03
5	4475(250)	37.04	36.13	2.221E-03	.1225	2.828E-03	.1560	2.735E-03	.1508	2.883E-03
1	2806(250)	38.12	37.21	2.188E-03	.1207	2.787E-03	.1537	2.695E-03	.1486	2.841E-03
5	4476(250)	38.12	37.21	2.188E-03	.1207	2.787E-03	.1537	2.695E-03	.1486	2.841E-03
1	2807(250)	39.22	38.31	2.157E-03	.1189	2.746E-03	.1515	2.656E-03	.1465	2.800E-03
5	4477(250)	39.22	38.31	2.157E-03	.1189	2.746E-03	.1515	2.656E-03	.1465	2.800E-03
1	2808(250)	40.30	39.38	2.127E-03	.1173	2.709E-03	.1494	2.619E-03	.1445	2.762E-03
5	4478(250)	40.30	39.38	2.127E-03	.1173	2.709E-03	.1494	2.619E-03	.1445	2.762E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEB	HEU
67	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.95	265.5	1274	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .060 FT)	SINEF (RE .060 FT)
93.7	.0238	1.253	3772	2.535E-05	7.567E-08	1.267E 06	1.813E-02	2.390E-02

CAMERA	FOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGAM)	TRAN(TO)	BETA(TO)
TOP(T)	1572					
SIDE(S)	1604	250	86	.9551	2.234E-01	2.6224E-01
BG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2H06(250)	41.37	42.46	2.08HE-03	.1157	2.672E-03	.1474	2.58HE-03	.1425	2.725E-03
S	4H79(250)	41.37	42.64	2.0HHE-03	.1157	2.672E-03	.1474	2.5HHE-03	.1425	2.725E-03
I	2H10(250)	42.45	41.54	2.071E-03	.1142	2.63HE-03	.1455	2.550E-03	.1407	2.689E-03
S	4H8(250)	42.45	41.56	2.071E-03	.1142	2.63HE-03	.1455	2.550E-03	.1407	2.689E-03
		43.50		MODEL HAS LEFT CENTERLINE						
I	2H11(250)	43.53	42.61	2.05E-03	.1129	2.604E-03	.1436	2.51HE-03	.1384	2.655E-03
S	4H1(250)	43.53	42.61	2.05E-03	.1129	2.604E-03	.1435	2.51HE-03	.1384	2.655E-03
I	2H12(250)	44.58	43.64	2.060E-03	.1114	2.573E-03	.1419	2.48HE-03	.1372	2.623E-03
I	2H13(250)	45.65	44.74	1.995E-03	.1101	2.541E-03	.1402	2.457E-03	.1355	2.591E-03
I	2H14(250)	46.70	45.73	1.972E-03	.1084	2.512E-03	.1384	2.429E-03	.1340	2.561E-03
I	2H15(250)	47.75	46.84	1.950E-03	.1076	2.484E-03	.1370	2.402E-03	.1325	2.532E-03
I	2H16(250)	48.83	47.93	1.928E-03	.1063	2.458E-03	.1354	2.375E-03	.1310	2.504E-03

392
GP 68
TPC 300
To 820
Po 265

2832℄

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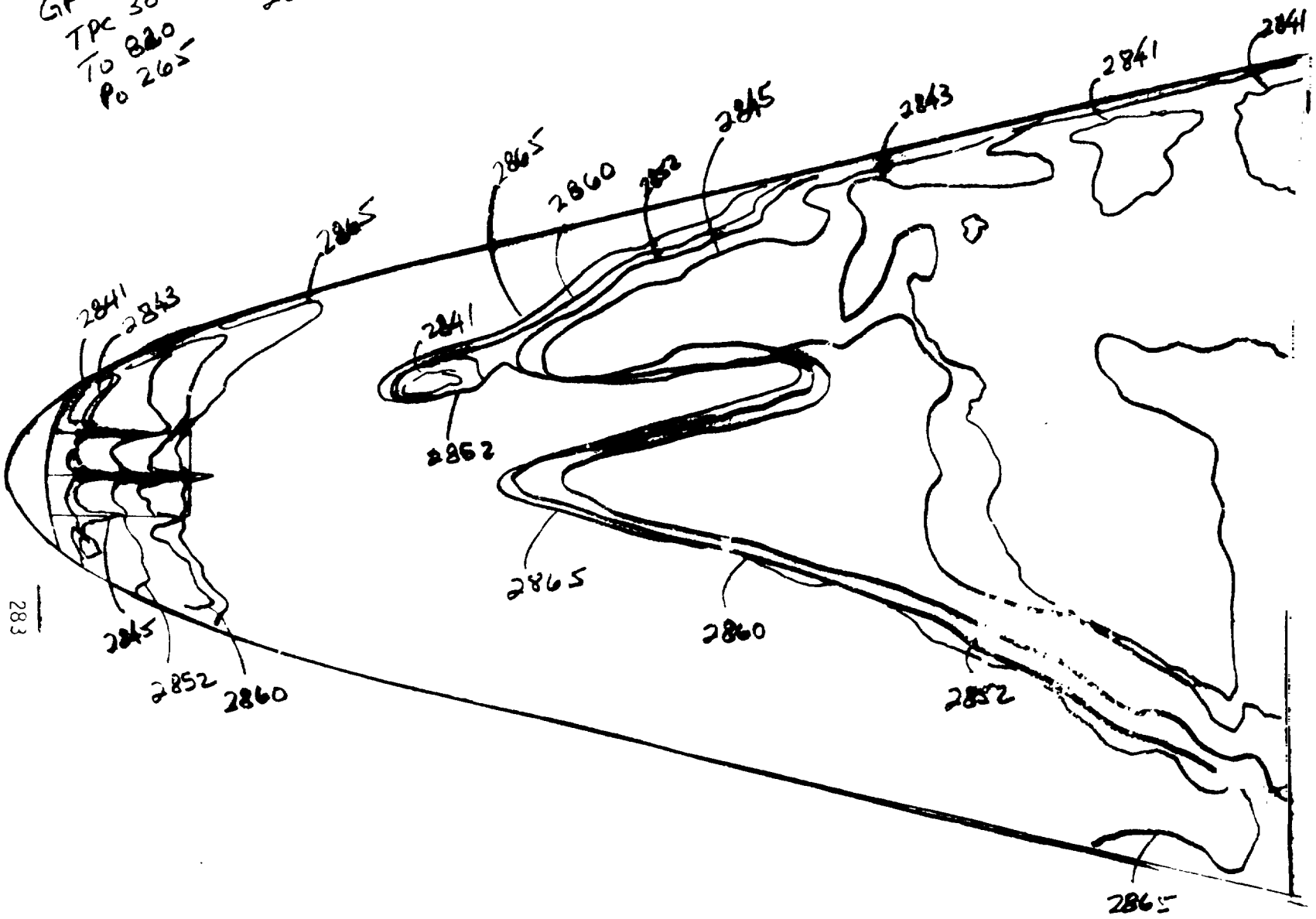

NASA-HI OH 56

V61H-624

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP CONFIG

*** MODEL DESCRIPTION ***

GAP LOCATION/SIZE X/L WIDTH DEPTH | TRIP LOCATION/SIZE TYPE X/L DIA. | REB | NEO

GP 5 PROTUBERANCE W/SIMULATED LANDING GEAR DOOR

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.95	265.7	1275	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SREF (H= .040 FT)
93.5	.024	1.254	3760	2.545E-05	7.525E-08	1.274E 06	1.413E-02	2.385E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	RETA(TO)
TOP(T)	392					
SIDE(S)	395	300	77	.0548	3.022E-01	3.558BE-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
T	2625(300)	.08		MODEL HAS NOT REACHED CENTERLINE						
S	4493(300)	.08		MODEL HAS NOT REACHED CENTERLINE						
T	2626(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4494(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
SUBJECT TIME =		1.03								
T	2832(300)	2.63	1.71	1.544E-02	.8515	2.013E-02	1.1101	1.824E-02	1.0060	1.555E-02
S	4495(300)	2.63	1.71	1.544E-02	.8515	2.013E-02	1.1101	1.824E-02	1.0060	1.595E-02
T	2833(300)	3.70	2.79	1.210E-02	.6674	1.577E-02	.8701	1.430E-02	.7885	1.564E-02
S	4496(300)	3.70	2.79	1.210E-02	.6674	1.577E-02	.8701	1.430E-02	.7885	1.564E-02
SUBJECT TIME =		3.95								
T	2532(300)	4.81	3.89	1.025E-02	.5651	1.336E-02	.7368	1.211E-02	.6677	1.324E-02
S	4497(300)	4.81	3.89	1.025E-02	.5651	1.336E-02	.7368	1.211E-02	.6677	1.324E-02
T	2833(300)	5.88	4.97	9.095E-03	.5002	1.192E-02	.6521	1.071E-02	.5910	1.172E-02
S	4498(300)	5.88	4.97	9.095E-03	.5002	1.192E-02	.6521	1.071E-02	.5910	1.172E-02
T	2834(300)	6.95	6.04	8.222E-03	.4535	1.072E-02	.5912	9.714E-03	.5356	1.062E-02
S	4499(300)	6.95	6.04	8.222E-03	.4535	1.072E-02	.5912	9.714E-03	.5356	1.062E-02
T	2835(300)	8.03	7.12	7.575E-03	.4178	9.876E-03	.5447	8.950E-03	.4937	9.789E-03
S	4500(300)	8.03	7.12	7.575E-03	.4178	9.876E-03	.5447	8.950E-03	.4937	9.789E-03
T	2836(300)	9.11	8.20	7.050E-03	.3894	9.205E-03	.5077	8.342E-03	.4601	9.124E-03
S	4501(300)	9.11	8.20	7.050E-03	.3894	9.205E-03	.5077	8.342E-03	.4601	9.124E-03
T	2837(300)	10.19	9.27	6.638E-03	.3661	8.654E-03	.4773	7.843E-03	.4326	8.578E-03
S	4502(300)	10.19	9.27	6.638E-03	.3661	8.654E-03	.4773	7.843E-03	.4326	8.578E-03
T	2838(300)	11.26	10.35	6.263E-03	.3456	8.192E-03	.4518	7.424E-03	.4095	8.120E-03
S	4503(300)	11.26	10.35	6.263E-03	.3456	8.192E-03	.4518	7.424E-03	.4095	8.120E-03
T	2839(300)	12.36	11.45	5.974E-03	.3295	7.788E-03	.4296	7.058E-03	.3893	7.720E-03
S	4504(300)	12.36	11.45	5.974E-03	.3295	7.788E-03	.4296	7.058E-03	.3893	7.720E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	PTS	REQ
64	5	PROTO-REFERENCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.95	265.7	1275	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (RE .040 FT)	SREF (RE .040 FT)
93.6	.024	1.294	3766	2.465E-05	7.525E-08	1.274E 06	1.813E-02	2.3 RE-02

CAMERA	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACKA)	TRAR(TO)	BETA(TO)
10F(1)	292					
SIL(S)	385	300	77	.0568	3.022E-01	3.5588E-01
3W						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/XREF	H(.9TO)	H(.9TO)/XREF	H(.934TO)	H(.934TO)/XREF	ST(TO)
I	2842(3600)	13.44	12.53	5.711E-03	.3150	7.446E-03	.4107	6.748E-03	.3722	7.381E-03
S	4505(3603)	13.44	12.53	5.711E-03	.3150	7.446E-03	.4107	6.748E-03	.3722	7.381E-03
I	2841(4001)	14.52	13.62	5.441E-03	.3023	7.145E-03	.3941	6.476E-03	.3572	7.083E-03
S	4507(4003)	14.52	13.62	5.441E-03	.3023	7.145E-03	.3941	6.476E-03	.3572	7.083E-03
I	2842(4002)	15.59	14.68	5.277E-03	.2910	6.878E-03	.3794	6.234E-03	.3438	6.818E-03
S	4508(4003)	15.59	14.68	5.277E-03	.2910	6.878E-03	.3794	6.234E-03	.3438	6.818E-03
I	2842(4003)	16.67	15.76	5.093E-03	.2809	6.639E-03	.3662	6.017E-03	.3319	6.581E-03
S	4509(4003)	16.67	15.76	5.093E-03	.2809	6.639E-03	.3662	6.017E-03	.3319	6.581E-03
I	2843(4003)	17.75	16.83	4.917E-03	.2718	6.423E-03	.3543	5.821E-03	.3211	6.367E-03
S	4509(4003)	17.75	16.83	4.917E-03	.2718	6.423E-03	.3543	5.821E-03	.3211	6.367E-03
I	2845(4003)	18.82	17.91	4.777E-03	.2635	6.227E-03	.3435	5.644E-03	.3113	6.173E-03
S	4511(4003)	18.82	17.91	4.777E-03	.2635	6.227E-03	.3435	5.644E-03	.3113	6.173E-03
I	2845(4003)	19.90	18.98	4.634E-03	.2554	6.048E-03	.3336	5.481E-03	.3023	5.995E-03
S	4511(4003)	19.90	18.98	4.634E-03	.2554	6.048E-03	.3336	5.481E-03	.3023	5.995E-03
I	2847(4003)	20.97	20.06	4.513E-03	.2489	5.894E-03	.3245	5.332E-03	.2941	5.832E-03
S	4512(4003)	20.97	20.06	4.513E-03	.2489	5.894E-03	.3245	5.332E-03	.2941	5.832E-03
I	2848(4003)	22.05	21.14	4.397E-03	.2425	5.732E-03	.3162	5.195E-03	.2865	5.682E-03
S	4513(4003)	[illegible]	21.14	4.397E-03	.2425	5.732E-03	.3162	5.195E-03	.2865	5.682E-03
I	2849(4003)	23.13	22.21	4.284E-03	.2366	5.592E-03	.3084	5.067E-03	.2795	5.543E-03
S	4514(4003)	23.13	22.21	4.284E-03	.2366	5.592E-03	.3084	5.067E-03	.2795	5.543E-03
I	2850(4003)	[illegible]	23.29	4.184E-03	.2313	5.461E-03	.3012	4.949E-03	.2730	5.413E-03
S	4515(4003)	24.20	23.29	4.184E-03	.2310	5.461E-03	.3012	4.949E-03	.2730	5.413E-03
I	2851(4003)	25.28	24.37	4.095E-03	.2259	5.339E-03	.2945	4.834E-03	.2669	5.292E-03
S	4516(4003)	25.28	24.37	4.095E-03	.2259	5.339E-03	.2945	4.834E-03	.2669	5.292E-03
I	[illegible] (4003)	26.36	25.44	4.005E-03	.2210	5.225E-03	.2882	4.735E-03	.2612	5.179E-03
S	[illegible] (4003)	26.36	25.44	[illegible]	.2210	5.225E-03	.2882	4.735E-03	.2612	5.179E-03

WPCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	THI LOCATION/SIZE TYPE	X/L	DIA.	HER	HEW
68	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.45	265.7	1275	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	STREF (HR .040 FT)
93.6	.124	1.234	3760	2.565E-05	7.325E-08	1.274E 06	1.813E-02	2.385E-02

CAPSULE	POLY NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUACK.)	TRAN(TO)	BETA(TO)
TOP(T)	392					
SIDE(S)	385	300	77	.0568	3.022E-01	3.558E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	2653(300)	27.43	25.52	3.925E-03	.2165	5.118E-03	.2823	4.638E-03	.2558	5.073E-03
5	4511(300)	27.43	25.52	3.925E-03	.2165	5.118E-03	.2823	4.638E-03	.2558	5.073E-03
1	2654(300)	24.51	27.59	3.884E-03	.2122	5.017E-03	.2767	4.547E-03	.2508	4.973E-03
5	4512(300)	24.51	27.59	3.884E-03	.2122	5.017E-03	.2767	4.547E-03	.2508	4.973E-03
1	2655(300)	24.56	24.65	3.777E-03	.2043	4.924E-03	.2716	4.462E-03	.2461	4.881E-03
5	4513(300)	24.58	25.67	3.775E-03	.2042	4.922E-03	.2715	4.460E-03	.2460	4.879E-03
1	2656(300)	31.86	25.74	3.785E-03	.2044	4.832E-03	.2665	4.375E-03	.2415	4.790E-03
5	4521(300)	31.86	25.74	3.785E-03	.2044	4.832E-03	.2665	4.375E-03	.2415	4.790E-03
1	2657(300)	31.71	3[illegible]	3.8[illegible]25E-03	.2039	4.7[illegible]E-03	.2619	4.30[illegible]E-03	.2374	4.707E-03
5	4522(300)	31.71	3[illegible]	3.8[illegible]25E-03	.2039	4.749E-03	.2619	4.30[illegible]E-03	.2374	4.707E-03
1	2658(300)	32.61	31.9[illegible]	3.579E-03	.1974	4.666E-03	.2574	4.224E-03	.2332	4.625E-03
5	4523(300)	32.61	31.9[illegible]	3.579E-03	.1974	4.666E-03	.2574	4.224E-03	.2332	4.625E-03
1	2659(300)	33.65	32.95	3.521E-03	.1942	4.591E-03	.2532	4.161E-03	.2295	4.551E-03
5	4524(300)	33.68	32.95	3.521E-03	.1942	4.591E-03	.2532	4.161E-03	.2295	4.551E-03
1	2660(300)	34.54	33.03	3.465E-03	.1911	4.518E-03	.2492	4.094E-03	.2258	4.478E-03
5	4525(300)	34.54	34.03	3.465E-03	.1911	4.518E-03	.2492	4.094E-03	.2258	4.478E-03
1	2661(300)	35.[illegible]2	35.[illegible]	3.412E-03	.1882	.4[illegible]8E-03	.2453	4.031E-03	.2223	4.409E-03
5	4526(300)	35.[illegible]2	35.[illegible]	3.412E-03	.1882	4.448E-03	.24[illegible]	4.031E-03	.2223	4.409E-03
1	2662(300)	37.09	35.19	3.361E-03	.1854	4.381E-03	.2417	3.971E-03	.2190	4.343E-03
5	4527(300)	37.09	35.19	3.361E-03	.1854	4.381E-03	.2417	3.971E-03	.2190	4.343E-03
1	2663(300)	38.17	37.26	3.312E-03	.1827	4.318E-03	.2381	3.913E-03	.2158	4.280E-03
5	4528(300)	38.17	37.26	3.312E-03	.1827	4.318E-03	.2381	3.913E-03	.2158	4.280E-03
1	2664(300)	33.65	34.33	3.265E-03	.1801	4.257E-03	.2348	3.854E-03	.2128	4.219E-03
5	4529(300)	33.65	34.33	3.265E-03	.1801	4.257E-03	.2348	3.854E-03	.2128	4.219E-03
		39.67		MODEL HAS LEFT CENTE						

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	MED
68	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.95	255.7	1275	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .060 FT)	STREF (W= .060 FT)
93.5	.024	1.254	3788	2.465E-05	7.525E-08	1.274E 06	1.913E-02	2.385E-02

CAPEHA	HOLE NO	PAINT TEMP (DEG F)	INTERNAL TEMP (DEG F)	SQUARE ROOT (RHOCAPA)	TRAN(TO)	HET(TO)
IOF(I)	392					
SIDE(S)	385	300	77	.0568	3.022E-01	3.5588E-01
SG						

	PTC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.8*TO)	H(TO)/HREF	H(.93*TO)	H(.924TO)/HREF	ST(TO)
I	35(300)	0:22	39.97	3.220E-03	.1776	4.198E-03	.2316	3.805E-03	.2099	4.161E-03
S	4531(300)	0:32	39.61	3.220E-03	.1776	4.198E-03	.2316	3.805E-03	.2099	4.161E-03
I	2[illegible](300)	0:40	40.68	4.177E-03	.1752	4.126E-03	.2245	3.754E-03	.2070	4.104E-03
S	4531(300)	0:40	40.68	4.177E-03	.1752	4.126E-03	.2245	3.754E-03	.2070	4.104E-03
I	2[illegible](300)	0:47	41.56	4.1[illegible]E-03	.1724	4.098E-03	.2285	3.785E-03	.2043	4.052E-03
S	4532(300)	0:47	41.56	4.1[illegible]E-03	.1724	4.098E-03	.2285	3.785E-03	.2043	4.052E-03
I	2[illegible]	0:55	42.64	3.0[illegible]E-03	.1708	4.036E-03	.2226	3.655E-03	.2017	4.001E-03
S	4533(300)	0:55	42.64	3.0[illegible]E-03	.1708	4.036E-03	.2226	3.655E-03	.2017	4.001E-03
I	2[illegible](300)	0:63	43.71	3.[illegible]E-03	.1[illegible]6	3.986E-03	.2199	3.612E-03	.1992	3.951E-03
S	4534(300)	0:63	43.71	3.[illegible]E-03	.1[illegible]	3.986E-03	.2199	3.612E-03	.1992	3.951E-03
I	2[illegible](300)	0:70	44.79	3.020E-03	.1[illegible]66	3.938E-03	.2172	3.5[illegible]E-03	.1968	3.903E-03
S	4535(300)	0:70	44.79	3.020E-03	.1[illegible]66	3.938E-03	.2172	3.534E-03	.1968	3.903E-03
I	[illegible]	[illegible]	45.[illegible]	2.[illegible]E-03	.1[illegible]6	3.891E-03	.2146	3.[illegible]E-03	.1945	3.857E-03
S	[illegible]	[illegible]	45.[illegible]	2.[illegible]E-03	.1[illegible]6	3.891E-03	.2146	3.[illegible]E-03	.1945	3.857E-03

GP 69
0392
2876 d

P_0 210
T_0 815
TPC 250

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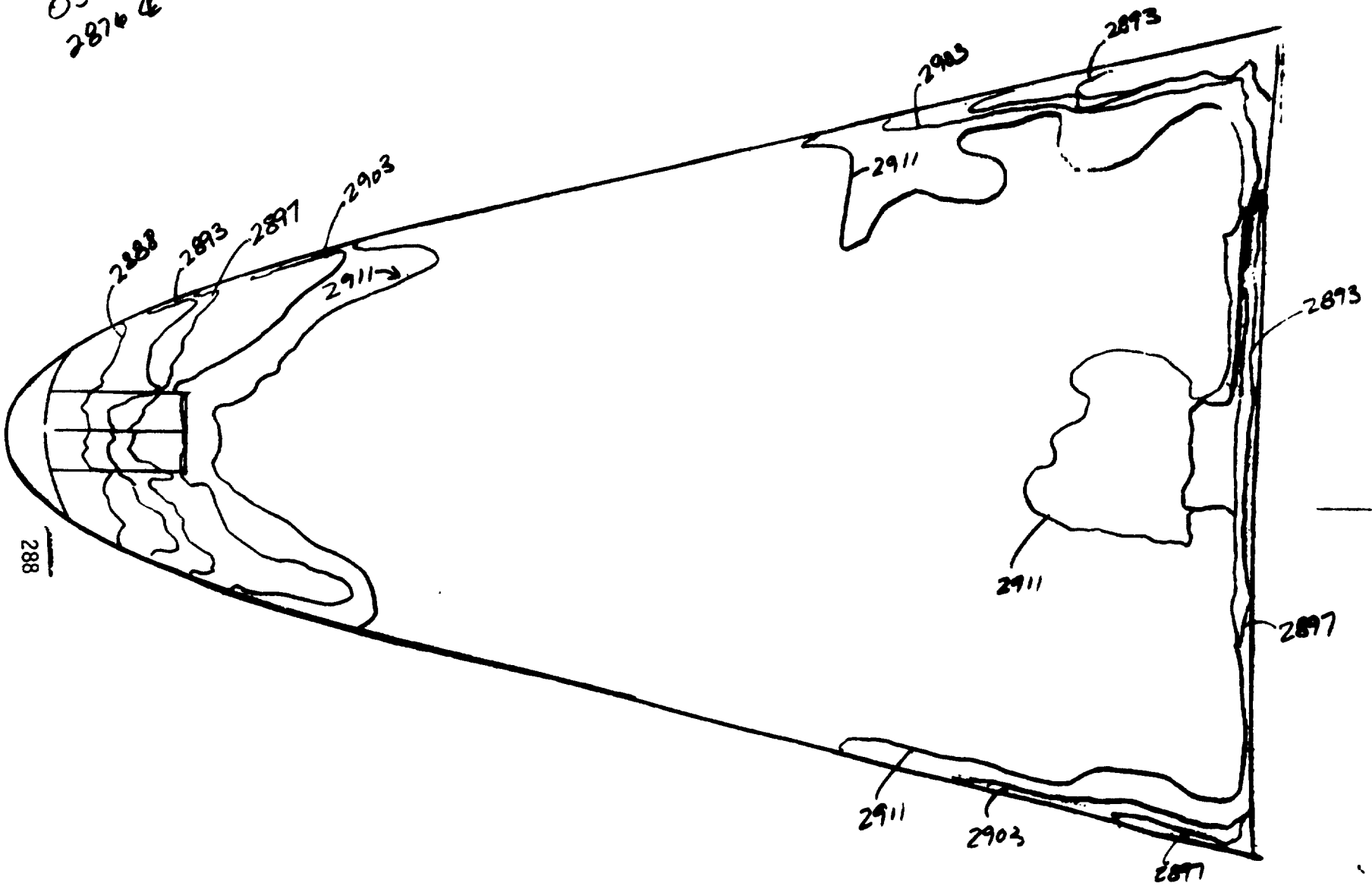

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V01H-A2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	MLO
69	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	211.0	1769	39.97	-0.97	38.80	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
93.3	.023	1.001	3757	2.041E-05	7.504E-08	1.021E 06	1.619E-02	2.002E-02

CAPPLA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAA)	TRAR(TO)	RETA(TO)
IOF(I)	392					
SICF(S)	395	250	86	.0551	2.269E-01	2.4613E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	2273(250)	.68		MODEL HAS NOT REACHED CENTERLINE						
S	4535(250)	.68		MODEL HAS NOT REACHED CENTERLINE						
I	2274(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4534(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	2275(250)	2.63	1.71	1.035E-02	.6398	1.322E-02	.8165	1.209E-02	.7464	1.677E-02
S	4536(250)	2.63	1.71	1.035E-02	.6398	1.322E-02	.8165	1.209E-02	.7464	1.677E-02
I	2276(250)	3.70	2.79	8.118E-03	.5015	1.034E-02	.6400	7.471E-03	.5851	1.315E-02
S	4541(250)	3.70	2.79	8.118E-03	.5015	1.034E-02	.6400	7.471E-03	.5851	1.315E-02
SG			1.93							
I	2277(250)	4.76	3.86	6.919E-03	.4276	8.830E-03	.5456	8.072E-03	.4986	1.121E-02
S	4542(250)	4.76	3.86	6.919E-03	.4276	8.830E-03	.5456	8.072E-03	.4986	1.121E-02
I	2278(250)	5.86	4.94	6.105E-03	.3769	7.786E-03	.4809	7.110E-03	.4396	9.879E-03
S	4543(250)	5.86	4.94	6.105E-03	.3764	7.786E-03	.4809	7.110E-03	.4396	9.879E-03
I	2279(250)	6.93	6.02	5.528E-03	.3415	7.054E-03	.4358	6.449E-03	.3984	8.952E-03
S	4544(250)	6.93	6.02	5.528E-03	.3415	7.054E-03	.4358	6.449E-03	.3984	8.952E-03
I	2280(250)	8.01	7.10	5.041E-03	.3145	6.497E-03	.4014	5.940E-03	.3669	8.246E-03
S	4545(250)	8.01	7.10	5.041E-03	.3145	6.497E-03	.4014	5.940E-03	.3669	8.246E-03
I	2281(250)	9.09	8.17	4.744E-03	.2931	6.054E-03	.3740	5.535E-03	.3419	7.683E-03
S	4546(250)	9.09	8.17	4.744E-03	.2931	6.054E-03	.3740	5.535E-03	.3419	7.683E-03
I	2282(250)	10.16	9.25	4.460E-03	.2755	5.691E-03	.3516	5.203E-03	.3214	7.223E-03
S	4547(250)	10.16	9.25	4.460E-03	.2755	5.691E-03	.3516	5.203E-03	.3214	7.223E-03
I	2283(250)	11.24	10.32	4.221E-03	.2607	5.346E-03	.3327	4.924E-03	.3042	6.836E-03
S	4548(250)	11.24	10.32	4.221E-03	.2607	5.346E-03	.3327	4.924E-03	.3042	6.836E-03
I	2284(250)	12.31	11.40	4.017E-03	.2481	5.126E-03	.3166	4.686E-03	.2895	6.505E-03
S	4549(250)	12.31	11.40	4.017E-03	.2481	5.126E-03	.3166	4.686E-03	.2895	6.505E-03

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V41H-02A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEA	HED
69	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	211.0	1269	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	WREF (W= .040 FT)	SIREF (W= .040 FT)
93.3	.021	1.091	3757	2.061E-05	7.509E-08	1.021E 06	1.619E-02	2.062E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
IOP(T)	392					
SICE(S)	385	250	86	.0551	2.268E-01	2.661E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
I	2885(250)	13.36	12.62	3.839E-03	.2372	4.900E-03	.3027	4.479E-03	.2767	6.218E-03
S	4550(250)	13.39	12.68	3.839E-03	.2372	4.900E-03	.3027	4.479E-03	.2767	6.218E-03
I	2886(250)	14.47	13.55	3.684E-03	.2276	4.701E-03	.2904	4.298E-03	.2655	5.965E-03
S	4551(250)	14.47	13.55	3.684E-03	.2276	4.701E-03	.2904	4.298E-03	.2655	5.966E-03
S	4552(250)	15.52	14.61	3.549E-03	.2192	4.529E-03	.2798	4.140E-03	.2556	5.749E-03
I	2887(250)	15.54	14.63	3.546E-03	.2190	4.525E-03	.2795	4.137E-03	.2555	5.743E-03
I	2889(250)	16.62	15.71	3.422E-03	.2114	4.367E-03	.2698	3.993E-03	.2466	5.542E-03
S	4553(250)	16.62	15.71	3.422E-03	.2114	4.367E-03	.2698	3.993E-03	.2466	5.542E-03
I	2888(250)	17.70	16.78	3.311E-03	.2045	4.225E-03	.2610	3.862E-03	.2386	5.362E-03
S	4554(250)	17.70	16.78	3.311E-03	.2045	4.225E-03	.2610	3.862E-03	.2386	5.362E-03
I	2890(250)	18.77	17.86	3.209E-03	.1982	4.096E-03	.2530	3.744E-03	.2313	5.198E-03
S	4555(250)	18.77	17.86	3.209E-03	.1982	4.096E-03	.2530	3.744E-03	.2313	5.198E-03
I	2891(250)	19.85	18.93	3.117E-03	.1925	3.977E-03	.2457	3.636E-03	.2246	5.048E-03
S	4556(250)	19.85	18.93	3.117E-03	.1925	3.977E-03	.2457	3.636E-03	.2246	5.048E-03
I	2892(250)	20.92	20.01	3.032E-03	.1873	3.869E-03	.2390	3.537E-03	.2185	4.910E-03
S	4557(250)	20.92	20.01	3.032E-03	.1873	3.869E-03	.2390	3.537E-03	.2185	4.910E-03
I	2893(250)	22.00	21.09	2.953E-03	.1824	3.769E-03	.2328	3.446E-03	.2129	4.783E-03
S	4558(250)	22.00	21.09	2.953E-03	.1824	3.769E-03	.2328	3.446E-03	.2129	4.783E-03
I	2894(250)	23.08	22.16	2.881E-03	.1780	3.676E-03	.2271	3.361E-03	.2076	4.666E-03
S	4559(250)	23.08	22.16	2.881E-03	.1780	3.676E-03	.2271	3.361E-03	.2076	4.666E-03
I	2895(250)	24.18	23.26	2.812E-03	.1737	3.588E-03	.2217	3.280E-03	.2026	4.554E-03
S	4560(250)	24.18	23.26	2.812E-03	.1737	3.588E-03	.2217	3.280E-03	.2026	4.554E-03
I	2896(250)	25.25	24.34	2.749E-03	.1698	3.508E-03	.2167	3.207E-03	.1981	4.452E-03
S	4561(250)	25.25	24.34	2.749E-03	.1698	3.508E-03	.2167	3.207E-03	.1981	4.452E-03
I	2897(250)	26.33	25.42	2.690E-03	.1662	3.433E-03	.2121	3.138E-03	.1939	4.357E-03
S	4562(250)	26.33	25.42	2.690E-03	.1662	3.433E-03	.2121	3.138E-03	.1939	4.357E-03

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V41A-R2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NEW
69	5	FRONTIERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	211.0	1269	39.97	-0.97	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .060 FT)	STREF (W= .060 FT)
93.3	.023	1.071	3757	2.041E-05	7.504E-08	1.821E 06	1.619E-02	2.602E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAK)	TRAN(TO)	BETA(TO)
10K(1)	382					
SILF(S)	385	250	86	.0591	2.268E-01	2.6613E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	394(250)	27.41	26.63	2.635E-03	.1628	3.363E-03	.2077	3.074E-03	.1899	4.267E-03
S	458(250)	27.41	26.49	2.635E-03	.1628	3.363E-03	.2077	3.074E-03	.1899	4.267E-03
I	395(250)	28.48	27.57	2.583E-03	.1596	3.294E-03	.2036	3.013E-03	.1862	4.183E-03
S	459(250)	28.48	27.57	2.583E-03	.1596	3.294E-03	.2036	3.013E-03	.1862	4.183E-03
I	396(250)	29.56	28.65	2.534E-03	.1565	3.232E-03	.1997	2.954E-03	.1826	4.104E-03
S	460(250)	29.58	28.67	2.533E-03	.1565	3.232E-03	.1997	2.954E-03	.1826	4.102E-03
I	397(250)	30.66	29.75	2.487E-03	.1536	3.173E-03	.1960	2.901E-03	.1792	4.027E-03
S	461(250)	30.66	29.75	2.487E-03	.1536	3.173E-03	.1960	2.901E-03	.1792	4.027E-03
I	398(250)	31.74	30.82	2.443E-03	.1509	3.117E-03	.1926	2.850E-03	.1761	3.956E-03
S	462(250)	31.74	30.83	2.443E-03	.1509	3.117E-03	.1926	2.850E-03	.1761	3.955E-03
I	399(250)	32.81	31.90	2.401E-03	.1483	3.064E-03	.1893	2.801E-03	.1731	3.889E-03
S	463(250)	32.81	31.90	2.401E-03	.1483	3.064E-03	.1893	2.801E-03	.1731	3.889E-03
I	400(250)	33.89	32.98	2.362E-03	.1459	3.014E-03	.1862	2.755E-03	.1702	3.825E-03
S	464(250)	33.89	32.98	2.362E-03	.1459	3.014E-03	.1862	2.755E-03	.1702	3.825E-03
I	401(250)	34.97	34.05	2.326E-03	.1436	2.966E-03	.1832	2.711E-03	.1675	3.764E-03
S	465(250)	34.97	34.05	2.326E-03	.1436	2.966E-03	.1832	2.711E-03	.1675	3.764E-03
I	402(250)	36.04	35.13	2.288E-03	.1414	2.920E-03	.1806	2.670E-03	.1649	3.706E-03
S	466(250)	36.04	35.13	2.288E-03	.1414	2.920E-03	.1806	2.670E-03	.1649	3.706E-03
I	403(250)	37.12	36.21	2.254E-03	.1392	2.876E-03	.1777	2.630E-03	.1624	3.650E-03
S	467(250)	37.12	36.21	2.254E-03	.1392	2.876E-03	.1777	2.630E-03	.1624	3.650E-03
I	404(250)	38.19	37.28	2.221E-03	.1372	2.835E-03	.1751	2.591E-03	.1601	3.597E-03
S	468(250)	38.19	37.28	2.221E-03	.1372	2.835E-03	.1751	2.591E-03	.1601	3.597E-03
I	405(250)	39.27	38.36	2.190E-03	.1353	2.795E-03	.1726	2.555E-03	.1578	3.547E-03
S	469(250)	39.27	38.36	2.190E-03	.1353	2.795E-03	.1726	2.555E-03	.1578	3.547E-03
I	406(250)	40.35	39.43	2.160E-03	.1334	2.756E-03	.1703	2.520E-03	.1557	3.498E-03
S	470(250)	40.35	39.43	2.160E-03	.1334	2.756E-03	.1703	2.520E-03	.1557	3.498E-03

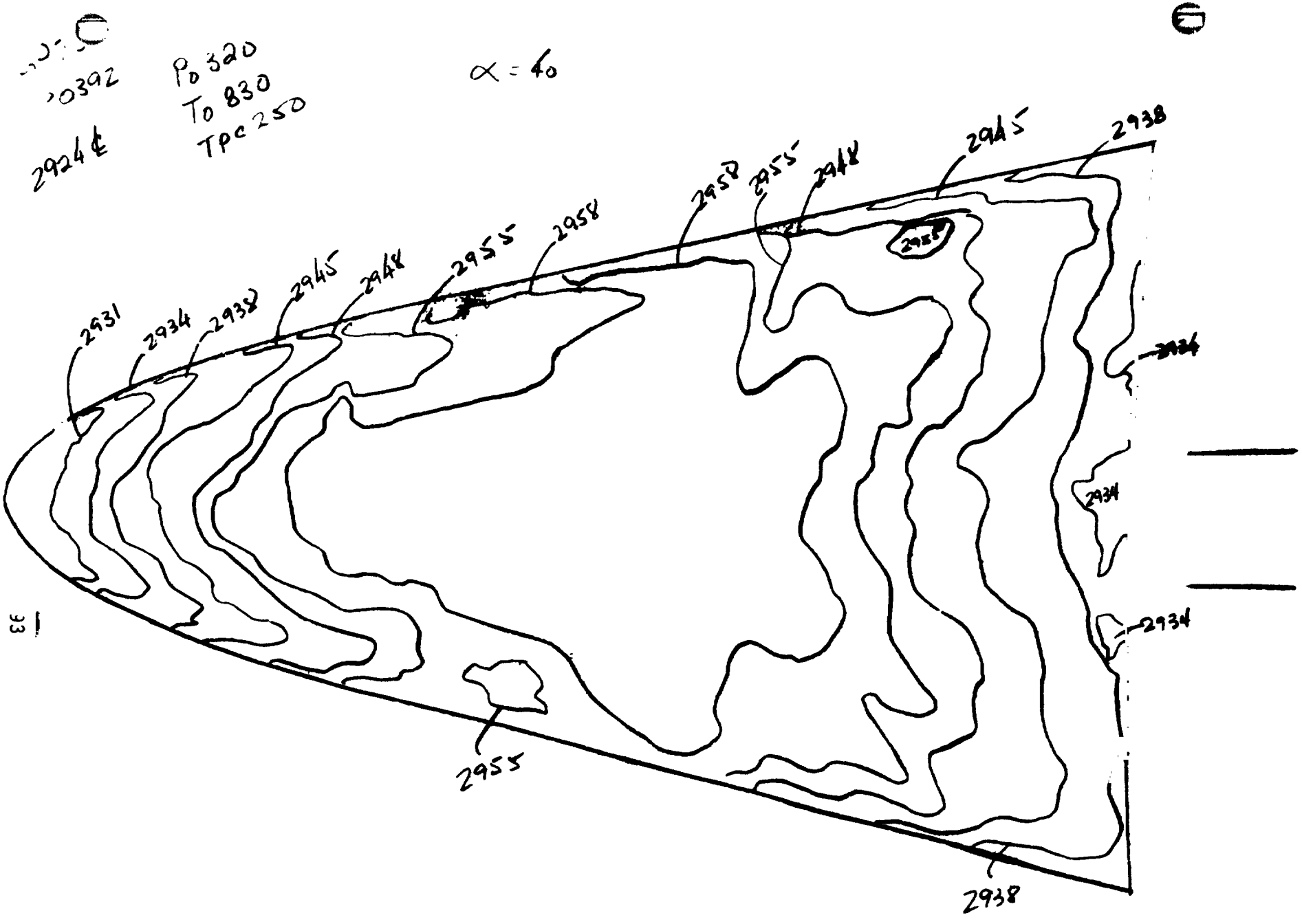
MRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEB	HED
69	5	PROTUBERANCE W/SIMULATED LANDING GEAR DOOR								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENU	ROLL-MODEL	YAW
7.94	211.0	1769	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RE .040 FT)	STREF (RE .040 FT)
93.3	.023	1.091	3757	2.061E-05	7.50YE-06	1.021E 06	1.610E-02	2.062E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXQXAA)	TRAN(TO)	BETA(TO)
IOP(I)	392					
SILE(S)	285	250	86	.0581	2.265E-01	2.6613E-01
SG						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.91TO)	M(.91TO)/MREF	M(.93-TO)	M(.93610)/MREF	ST(TO)
I	2511(250)	41.42	42.51	2.131E-03	.1314	2.713E-03	.1640	2.486E-03	.1536	3.451E-03
S	4576(250)	41.42	42.51	2.131E-03	.1314	2.713E-03	.1640	2.488E-03	.1536	3.451E-03
I	2512(250)	42.47	41.58	2.104E-03	.1300	2.685E-03	.1658	2.454E-03	.1516	3.407E-03
S	4577(250)	42.50	41.59	2.103E-03	.1299	2.684E-03	.1658	2.454E-03	.1516	3.406E-03
		43.50		MODEL HAS LEFT CENTERLINE						
I	2513(250)	43.58	42.66	2.076E-03	.1283	2.650E-03	.1637	2.422E-03	.1496	3.363E-03
S	4578(250)	43.58	42.66	2.076E-03	.1283	2.650E-03	.1637	2.422E-03	.1496	3.363E-03
I	2514(250)	44.63	43.71	2.051E-03	.1267	2.618E-03	.1617	2.393E-03	.1478	3.322E-03
S	4579(250)	44.63	43.71	2.051E-03	.1267	2.618E-03	.1617	2.393E-03	.1478	3.322E-03
I	2515(250)	45.73	44.81	2.026E-03	.1251	2.585E-03	.1597	2.364E-03	.1460	3.281E-03
S	4580(250)	45.73	44.81	2.026E-03	.1251	2.585E-03	.1597	2.364E-03	.1460	3.281E-03
I	2516(250)	46.80	45.89	2.002E-03	.1237	2.555E-03	.1578	2.336E-03	.1443	3.242E-03
S	4581(250)	46.80	45.89	2.002E-03	.1237	2.555E-03	.1578	2.336E-03	.1443	3.242E-03
I	2517(250)	47.88	46.97	1.979E-03	.1222	2.525E-03	.1560	2.304E-03	.1426	3.205E-03
S	4582(250)	47.88	46.97	1.979E-03	.1222	2.525E-03	.1560	2.304E-03	.1426	3.205E-03
I	2518(250)	48.96	48.04	1.957E-03	.1209	2.497E-03	.1543	2.283E-03	.1410	3.169E-03
S	4583(250)	48.96	48.04	1.957E-03	.1209	2.497E-03	.1543	2.283E-03	.1410	3.169E-03
I	2519(250)	50.03	49.12	1.935E-03	.1195	2.470E-03	.1526	2.258E-03	.1395	3.134E-03
S	4584(250)	50.03	49.12	1.935E-03	.1195	2.470E-03	.1526	2.258E-03	.1395	3.134E-03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NASA-MI CH 56 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 7-74 PAGE 1

V41H-82A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REW
70	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRESENT	ROLL-MODEL	YAW
7.96	321.5	1264	39.96	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .040 FT)	STREF (R= .040 FT)
94.1	.034	1.509	3783	3.934E-05	7.572E-08	1.518E 06	1.942E-02	2.188E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAA)	TRAN(TO)	BETA(TO)
IOF(T)	392					
SIDE(S)	385	250	76	.9551	2.320E-01	2.5317E-01
SG						

	PIC NO	TIME	DELTIME	H(T0)	H(T0)/HREF	H(.9T0)	H(.9T0)/HREF	H(.934T0)	H(.934T0)/HREF	ST(T0)
I	2921(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
S	4586(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	2922(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4587(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
I	2923(250)	2.63	1.71	1.065E-02	.5349	1.353E-02	.6795	1.234E-02	.6223	1.152E-02
S	4588(250)	2.63	1.71	1.065E-02	.5349	1.353E-02	.6795	1.234E-02	.6223	1.152E-02
I	2924(250)	3.70	2.78	8.350E-03	.4193	1.061E-02	.5326	9.715E-03	.4878	9.029E-03
S	4589(250)	3.70	2.78	8.350E-03	.4193	1.061E-02	.5326	9.715E-03	.4878	9.029E-03
SG		3.96								
I	2925(250)	4.78	3.87	7.044E-03	.3562	9.011E-03	.4555	8.253E-03	.4144	7.670E-03
S	4590(250)	4.78	3.87	7.044E-03	.3562	9.011E-03	.4555	8.253E-03	.4144	7.670E-03
I	2926(250)	5.88	4.96	6.274E-03	.3156	7.970E-03	.4002	7.296E-03	.3665	6.784E-03
S	4591(250)	5.88	4.97	6.293E-03	.3143	7.950E-03	.3992	7.281E-03	.3656	6.767E-03
I	2927(250)	6.96	6.04	5.674E-03	.2849	7.208E-03	.3619	6.601E-03	.3315	6.135E-03
S	4592(250)	6.96	6.04	5.674E-03	.2849	7.208E-03	.3619	6.601E-03	.3315	6.135E-03
I	2928(250)	8.01	7.11	5.237E-03	.2630	6.652E-03	.3340	6.093E-03	.3059	5.662E-03
S	4593(250)	8.01	7.11	5.237E-03	.2630	6.652E-03	.3340	6.093E-03	.3059	5.662E-03
I	2929(250)	9.09	8.17	.880E-03	.2450	6.199E-03	.3113	5.677E-03	.2851	5.276E-03
S	4594(250)	9.11	8.20	4.872E-03	.2447	6.199E-03	.3108	5.666E-03	.2846	5.264E-03
I	2930(250)	10.16	9.25	4.547E-03	.2303	5.827E-03	.2926	5.337E-03	.2680	4.960E-03
S	4595(250)	10.16	9.25	4.547E-03	.2303	5.827E-03	.2926	5.337E-03	.2680	4.960E-03
I	2931(250)	11.24	10.32	4.341E-03	.2180	5.515E-03	.2769	5.051E-03	.2536	4.694E-03
S	4596(250)	11.24	10.32	4.341E-03	.2180	5.515E-03	.2769	5.051E-03	.2536	4.694E-03
I	2932(250)	12.31	11.40	4.131E-03	.2075	5.248E-03	.2635	4.807E-03	.2414	4.467E-03
S	4597(250)	12.31	11.40	4.131E-03	.2075	5.248E-03	.2635	4.807E-03	.2414	4.467E-03

ORCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NEU
70	1	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.5	1296	39.96	-0.96	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	STREF (IN .040 FT)
94.1	.036	1.505	3783	3.034E-05	7.572E-08	1.510E 06	1.992E-02	2.1MAE-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAK)	TRAN(TO)	BETA(TO)
TOP(T)	392					
SIDE(S)	385	250	76	.0551	2.320E-01	2.5317E-01
SG						

	PIC NO	TIME	DELTIME	M(10)	M(TO)/MREF	M(.9TO)	M(.9TO)/MREF	M(.934TO)	M(.934TO)/MREF	ST(10)
1	2533(250)	13.39	12.68	3.949E-03	.1983	5.017E-03	.2519	4.595E-03	.2307	4.270E-03
S	4598(250)	13.39	12.68	3.949E-03	.1983	5.017E-03	.2519	4.595E-03	.2307	4.270E-03
1	2534(250)	14.49	13.58	3.788E-03	.1901	4.809E-03	.2415	4.404E-03	.2212	4.093E-03
S	4599(250)	14.49	13.58	3.788E-03	.1901	4.809E-03	.2415	4.404E-03	.2212	4.093E-03
1	2535(250)	15.57	14.65	3.644E-03	.1830	4.629E-03	.2324	4.239E-03	.2129	3.940E-03
S	4600(250)	15.57	14.65	3.644E-03	.1830	4.629E-03	.2324	4.239E-03	.2129	3.940E-03
1	2536(250)	16.64	15.73	3.517E-03	.1766	4.469E-03	.2243	4.092E-03	.2055	3.803E-03
S	4601(250)	16.64	15.73	3.517E-03	.1766	4.469E-03	.2243	4.092E-03	.2055	3.803E-03
1	2537(250)	17.73	16.76	3.405E-03	.1710	4.326E-03	.2172	3.962E-03	.1989	3.682E-03
S	4602(250)	17.72	16.81	3.403E-03	.1709	4.322E-03	.2170	3.959E-03	.1988	3.679E-03
1	2538(250)	18.50	17.88	3.299E-03	.1656	4.190E-03	.2104	3.838E-03	.1927	3.567E-03
S	4603(250)	18.50	17.88	3.299E-03	.1656	4.190E-03	.2104	3.838E-03	.1927	3.567E-03
1	2539(250)	19.25	18.93	3.210E-03	.1610	4.072E-03	.2045	3.730E-03	.1873	3.466E-03
S	4604(250)	19.25	18.93	3.210E-03	.1610	4.072E-03	.2045	3.730E-03	.1873	3.466E-03
1	2540(250)	20.92	20.01	3.118E-03	.1566	3.961E-03	.1989	3.628E-03	.1822	3.372E-03
S	4605(250)	20.92	20.01	3.118E-03	.1566	3.961E-03	.1989	3.628E-03	.1822	3.372E-03
1	2541(250)	22.00	21.09	3.038E-03	.1525	3.859E-03	.1938	3.534E-03	.1775	3.285E-03
S	4606(250)	22.00	21.09	3.038E-03	.1525	3.859E-03	.1938	3.534E-03	.1775	3.285E-03
S	4607(250)	23.08	22.16	2.983E-03	.1498	3.704E-03	.1890	3.447E-03	.1731	3.204E-03
1	2542(250)	23.10	22.19	2.981E-03	.1497	3.702E-03	.1889	3.445E-03	.1730	3.202E-03
1	2543(250)	24.18	23.26	2.892E-03	.1452	3.674E-03	.1845	3.365E-03	.1690	3.127E-03
S	4608(250)	24.18	23.26	2.892E-03	.1452	3.674E-03	.1845	3.365E-03	.1690	3.127E-03
1	2544(250)	25.23	24.32	2.824E-03	.1421	3.594E-03	.1804	3.291E-03	.1653	3.059E-03
S	4609(250)	25.23	24.32	2.824E-03	.1421	3.594E-03	.1804	3.291E-03	.1653	3.059E-03
1	2545(250)	26.31	25.39	2.708E-03	.1390	3.517E-03	.1766	3.221E-03	.1617	2.993E-03
S	4610(250)	26.31	25.39	2.708E-03	.1390	3.517E-03	.1766	3.221E-03	.1617	2.993E-03

RUN #	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	MEX	MEN
70	3	SHOOTP								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.96	321.5	1200	30.96	-0.04	30.08	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (NO .040 FT)	STREF (NO .040 FT)
94.1	.034	1.559	3783	3.034E-05	7.572E-07	1.516E 04	1.392E-02	2.186E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCRKK)	TRAR(TO)	RETA(TO)
IOF(T)	392					
SICF(S)	385	250	76	.4551	2.320E-01	2.5317E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	2546(250)	27.38	26.67	2.711E-03	.1362	3.444E-03	.1730	3.155E-03	.1584	2.932E-03
S	4411(250)	27.38	26.67	2.711E-03	.1362	3.444E-03	.1730	3.155E-03	.1584	2.932E-03
I	2547(250)	28.46	27.54	2.658E-03	.1335	3.376E-03	.1695	3.092E-03	.1553	2.874E-03
S	4412(250)	28.46	27.54	2.658E-03	.1335	3.376E-03	.1695	3.092E-03	.1553	2.874E-03
I	2548(250)	29.53	28.62	2.608E-03	.1309	3.312E-03	.1663	3.034E-03	.1523	2.819E-03
S	4413(250)	29.53	28.62	2.608E-03	.1309	3.312E-03	.1663	3.034E-03	.1523	2.819E-03
I	2549(250)	30.61	29.70	2.500E-03	.1255	3.252E-03	.1633	2.978E-03	.1495	2.764E-03
S	4414(250)	30.61	29.70	2.500E-03	.1255	3.252E-03	.1633	2.978E-03	.1495	2.764E-03
I	2550(250)	31.69	30.77	2.515E-03	.1263	3.194E-03	.1604	2.926E-03	.1469	2.719E-03
S	4415(250)	31.69	30.77	2.515E-03	.1263	3.194E-03	.1604	2.926E-03	.1469	2.719E-03
I	2551(250)	32.76	31.85	2.472E-03	.1241	3.140E-03	.1577	2.876E-03	.1444	2.673E-03
S	4416(250)	32.76	31.85	2.472E-03	.1241	3.140E-03	.1577	2.876E-03	.1444	2.673E-03
I	2552(250)	33.84	32.93	2.431E-03	.1221	3.044E-03	.1551	2.826E-03	.1420	2.629E-03
S	4417(250)	33.84	32.93	2.430E-03	.1220	3.087E-03	.1550	2.827E-03	.1420	2.629E-03
I	2553(250)	34.92	34.00	2.392E-03	.1201	3.039E-03	.1526	2.783E-03	.1398	2.587E-03
S	4418(250)	34.92	34.00	2.392E-03	.1201	3.039E-03	.1526	2.783E-03	.1398	2.587E-03
I	2554(250)	35.99	35.08	2.355E-03	.1183	2.992E-03	.1502	2.740E-03	.1376	2.547E-03
S	4419(250)	35.99	35.08	2.355E-03	.1183	2.992E-03	.1502	2.740E-03	.1376	2.547E-03
I	2555(250)	37.04	36.13	2.321E-03	.1165	2.948E-03	.1480	2.700E-03	.1356	2.509E-03
S	4420(250)	37.07	36.15	2.320E-03	.1165	2.947E-03	.1480	2.699E-03	.1355	2.509E-03
		37.82		MODEL HAS LEFT CENTERLINE						
I	2556(250)	38.14	37.23	2.286E-03	.1149	2.904E-03	.1458	2.660E-03	.1336	2.472E-03
S	4421(250)	38.14	37.23	2.286E-03	.1148	2.904E-03	.1458	2.660E-03	.1336	2.472E-03
I	2557(250)	39.20	38.29	2.255E-03	.1132	2.864E-03	.1439	2.623E-03	.1317	2.438E-03
S	4422(250)	39.20	38.29	2.255E-03	.1132	2.864E-03	.1438	2.623E-03	.1317	2.438E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
F8	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.5	1286	39.96	-0.96	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	DTREF (R= .040 FT)
96.1	.034	1.516	3783	3.034E-05	7.472E-06	1.516E 06	1.992E-02	2.146E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
10F(I)	302					
SILF(S)	305	250	76	.0551	2.320E-01	2.5317E-01
36						

	PIC NO	TIME	CELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
1	2554(250)	40.30	39.38	2.223E-03	.1116	2.824E-03	.1418	2.588E-03	.1299	2.403E-03
3	4423(250)	40.30	39.38	2.223E-03	.1116	2.824E-03	.1418	2.588E-03	.1299	2.403E-03
1	2554(250)	41.37	43.48	2.143E-03	.1101	2.768E-03	.1399	2.551E-03	.1281	2.371E-03
3	4426(250)	41.37	43.48	2.143E-03	.1101	2.768E-03	.1399	2.551E-03	.1281	2.371E-03

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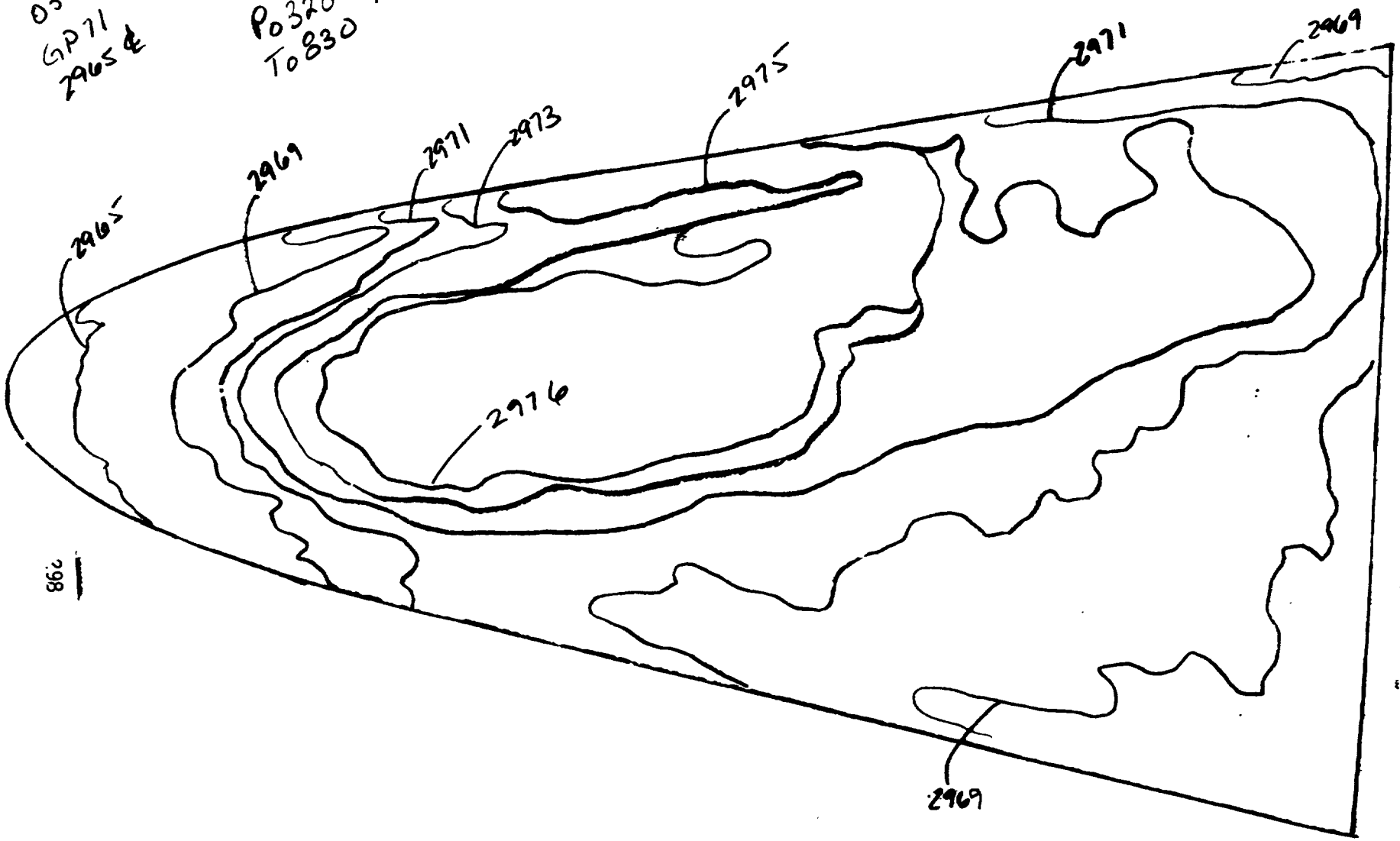

WHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NED
71	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	319.4	1286	29.79	.21	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
99.1	.434	1.511	3783	3.001E-05	7.572E-06	1.508E 06	1.986E-02	2.192E-02

CAPERA	ROLL NO	PSIFT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	BETA(TO)
10F(1)	302					
SIEF(S)	345	175	82	.0514	7.250E-01	1.2305E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2562(175)	.68		MODEL HAS NOT REACHED CENTERLINE						
S	4627(175)	.68		MODEL HAS NOT REACHED CENTERLINE						
I	2563(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4628(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.05							
I	2564(175)	2.63	1.75	4.884E-03	.2451	6.054E-03	.3048	5.880E-03	.2963	5.335E-03
S	4629(175)	2.63	1.75	4.884E-03	.2451	6.054E-03	.3048	5.880E-03	.2963	5.335E-03
I	2565(175)	3.70	2.78	3.675E-03	.1926	4.738E-03	.2385	4.605E-03	.2319	4.175E-03
S	4630(175)	3.70	2.78	3.675E-03	.1926	4.738E-03	.2385	4.605E-03	.2319	4.175E-03
SG			3.83							
I	2566(175)	4.76	3.83	3.258E-03	.1640	4.035E-03	.2032	3.923E-03	.1975	3.556E-03
S	4631(175)	4.76	3.83	3.258E-03	.1640	4.035E-03	.2032	3.923E-03	.1975	3.556E-03
I	2567(175)	5.83	4.90	2.878E-03	.1449	3.565E-03	.1795	3.466E-03	.1745	3.141E-03
S	4632(175)	5.83	4.90	2.878E-03	.1449	3.565E-03	.1795	3.466E-03	.1745	3.141E-03
I	2568(175)	6.91	5.98	2.606E-03	.1312	3.228E-03	.1625	3.134E-03	.1580	2.845E-03
S	4633(175)	6.91	5.98	2.606E-03	.1312	3.228E-03	.1625	3.134E-03	.1580	2.845E-03
I	2569(175)	7.98	7.06	2.369E-03	.1208	2.972E-03	.1496	2.884E-03	.1455	2.619E-03
S	4634(175)	7.98	7.06	2.369E-03	.1208	2.972E-03	.1496	2.884E-03	.1455	2.619E-03
I	2570(175)	9.06	8.13	2.215E-03	.1125	2.768E-03	.1394	2.691E-03	.1355	2.439E-03
S	4635(175)	9.06	8.13	2.215E-03	.1125	2.768E-03	.1394	2.691E-03	.1355	2.439E-03
I	2571(175)	10.16	9.21	2.100E-03	.1058	2.601E-03	.1310	2.524E-03	.1273	2.292E-03
S	4636(175)	10.16	9.21	2.100E-03	.1058	2.601E-03	.1310	2.524E-03	.1273	2.292E-03
I	2572(175)	11.21	10.29	1.984E-03	.1001	2.402E-03	.1239	2.343E-03	.1205	2.169E-03
S	4637(175)	11.21	10.29	1.984E-03	.1001	2.402E-03	.1239	2.343E-03	.1205	2.169E-03
I	2573(175)	12.29	11.36	1.891E-03	.0952	2.342E-03	.1179	2.277E-03	.1146	2.064E-03
S	4638(175)	12.29	11.36	1.891E-03	.0952	2.342E-03	.1179	2.277E-03	.1146	2.064E-03

V41H-824 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	NED
71	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	319.8	1286	24.79	.21	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
94.1	.036	1.561	3783	3.01RE-05	7.57E-06	1.50RE 06	1.9R6E-02	2.192E-02

LAPSED TIME(S)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOKCKAK)	TRAW(TO)	BETA(TO)
	392					
SICF(S)	385	175	R2	.051R	1.250E-01	1.230SE-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2574(175)	13.37	12.44	1.867E-03	.0910	2.239E-03	.1127	2.176E-03	.1096	1.973E-03
S	6439(175)	13.37	12.44	1.867E-03	.0910	2.239E-03	.1127	2.176E-03	.1096	1.973E-03
I	2575(175)	14.44	13.51	1.734E-03	.0873	2.148E-03	.1081	2.088E-03	.1051	1.892E-03
S	6440(175)	14.44	13.51	1.734E-03	.0873	2.148E-03	.1081	2.088E-03	.1051	1.892E-03
I	2576(175)	15.54	14.62	1.667E-03	.0839	2.065E-03	.1040	2.008E-03	.1011	1.820E-03
S	6441(175)	15.54	14.62	1.667E-03	.0839	2.065E-03	.1040	2.008E-03	.1011	1.820E-03
		15.16		MODEL HAS LEFT CENTERLINE						
S	6442(175)	16.59	15.67	1.610E-03	.0811	1.995E-03	.1004	1.934E-03	.0974	1.758E-03
I	2577(175)	16.62	15.69	1.610E-03	.0810	1.993E-03	.1003	1.933E-03	.0974	1.754E-03
I	2578(175)	17.67	16.74	1.558E-03	.0784	1.924E-03	.0971	1.876E-03	.0944	1.700E-03
S	6443(175)	17.67	16.74	1.558E-03	.0784	1.924E-03	.0971	1.876E-03	.0944	1.700E-03
I	2579(175)	18.77	17.84	1.509E-03	.0760	1.869E-03	.0941	1.817E-03	.0915	1.647E-03
S	6444(175)	18.77	17.84	1.509E-03	.0760	1.869E-03	.0941	1.817E-03	.0915	1.647E-03
I	2580(175)	19.82	18.9[illegible]	1.466E-03	.0738	1.816E-03	.0914	1.766E-03	.0889	1.600E-03
S	6445(175)	19.82	18.9[illegible]	1.466E-03	.0738	1.816E-03	.0914	1.766E-03	.0889	1.600E-03
I	2581(175)	20.92	20.00	1.425E-03	.0718	1.765E-03	.0889	1.716E-03	.0864	1.556E-03
S	6446(175)	20.92	20.00	1.425E-03	.0718	1.765E-03	.0889	1.716E-03	.0864	1.556E-03

035.
GP 72 Po 425
2986 ℄ 10 840
TPC-250

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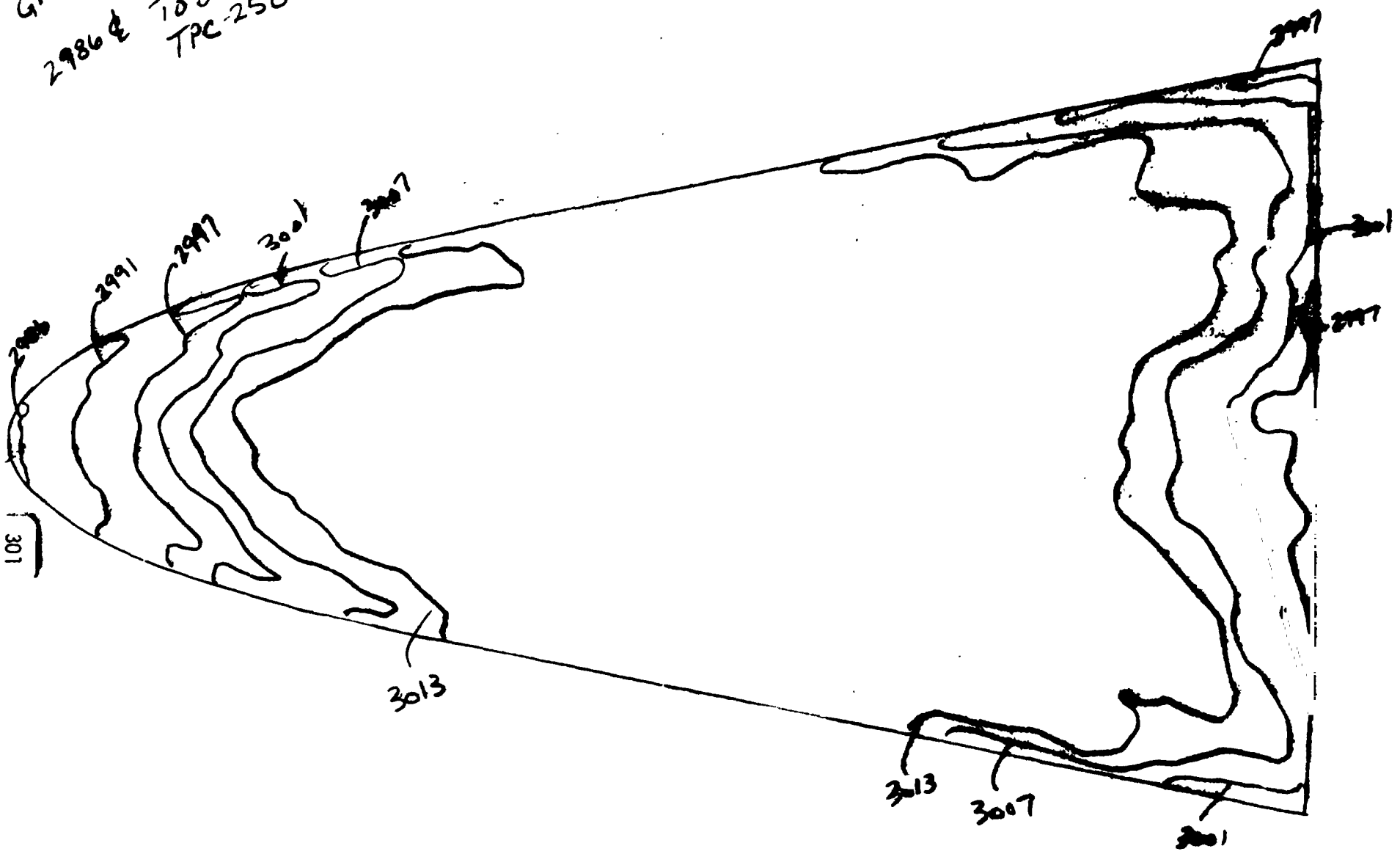

301

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V41H-020 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE A/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NEW
72	3	SMOOTH								

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	426.9	1251	29.79	.21	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	AREF (IN .060 FT)	SREF (IN .060 FT)
94.0	.044	1.991	3791	3.947E-05	7.508E-08	1.597E 06	2.284E-02	1.918E-02

LAPSE (DEG F)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGA)	TRAN(TO)	BETA(TO)
10F(T)	392					
SILE(S)	386	250	82	.9551	2.243E-01	2.4276E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.8TO)	H(.8TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2683(250)	.08		MODEL HAS NOT REACHED CENTERLINE						
S	4646(250)	.08		MODEL HAS NOT REACHED CENTERLINE						
I	2684(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4647(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	2685(250)	2.60	1.69	1.033E-02	.4525	1.311E-02	.5743	1.271E-02	.5563	8.524E-03
S	4650(250)	2.60	1.69	1.033E-02	.4525	1.311E-02	.5743	1.271E-02	.5563	8.524E-03
I	2686(250)	3.70	2.74	8.027E-03	.3515	1.019E-02	.4461	9.870E-03	.4322	6.621E-03
S	4651(250)	3.70	2.74	8.027E-03	.3515	1.019E-02	.4461	9.870E-03	.4322	6.621E-03
SG		3.93								
I	2687(250)	4.78	3.84	6.814E-03	.2984	8.649E-03	.3787	8.374E-03	.3669	5.621E-03
S	4652(250)	4.78	3.84	6.814E-03	.2984	8.649E-03	.3787	8.374E-03	.3669	5.621E-03
I	2688(250)	5.86	4.93	6.025E-03	.2638	7.646E-03	.3348	7.408E-03	.3244	4.970E-03
S	4653(250)	5.86	4.93	6.025E-03	.2638	7.646E-03	.3348	7.408E-03	.3244	4.970E-03
I	2689(250)	6.93	6.01	5.392E-03	.2390	6.927E-03	.3033	6.711E-03	.2939	4.502E-03
S	4654(250)	6.93	6.01	5.392E-03	.2390	6.927E-03	.3033	6.711E-03	.2939	4.502E-03
I	2690(250)	7.98	7.06	5.035E-03	.2235	6.341E-03	.2778	6.191E-03	.2711	4.154E-03
S	4655(250)	8.01	7.09	5.026E-03	.2201	6.379E-03	.2793	6.180E-03	.2706	4.146E-03
I	2691(250)	9.09	8.16	4.663E-03	.2051	5.944E-03	.2603	5.758E-03	.2521	3.863E-03
S	4656(250)	9.09	8.16	4.663E-03	.2051	5.944E-03	.2603	5.758E-03	.2521	3.863E-03
I	2692(250)	10.16	9.23	4.402E-03	.1927	5.587E-03	.2446	5.412E-03	.2370	3.631E-03
S	4657(250)	10.16	9.23	4.402E-03	.1927	5.587E-03	.2446	5.412E-03	.2370	3.631E-03
I	2693(250)	11.24	10.31	4.166E-03	.1824	5.287E-03	.2315	5.122E-03	.2243	3.436E-03
S	4658(250)	11.24	10.31	4.166E-03	.1824	5.287E-03	.2315	5.122E-03	.2243	3.436E-03
I	2694(250)	12.31	11.38	3.964E-03	.1736	5.031E-03	.2203	4.874E-03	.2134	3.270E-03
S	4659(250)	12.31	11.38	3.964E-03	.1736	5.031E-03	.2203	4.874E-03	.2134	3.270E-03

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V614-824 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

WRCLR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	RES	NEW
72	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	426.9	1251	29.79	.21	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	SINREF (HR .040 FT)
96.0	.044	1.491	3791	3.987E-05	7.588E-08	1.587E 06	2.284E-02	1.913E-02

CAMERA	ROLL NO	POINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXQCAR)	TRAN(TO)	BETA(TO)
104(T)	392					
SILF(S)	385	250	82	.0591	2.243E-01	2.4276E-01
SG						

	PIC NO	TIME	(E) TIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	2595(250)	13.37	12.44	3.793E-03	.1661	4.814E-03	.2108	4.663E-03	.2042	3.129E-03
S	4655(250)	13.37	12.44	3.793E-03	.1661	4.814E-03	.2108	4.663E-03	.2042	3.129E-03
I	2596(250)	14.44	13.51	3.639E-03	.1593	4.618E-03	.2022	4.476E-03	.1959	3.001E-03
S	4656(250)	14.44	13.51	3.639E-03	.1593	4.618E-03	.2022	4.476E-03	.1959	3.001E-03
I	2597(250)	15.54	14.62	3.499E-03	.1532	4.441E-03	.1944	4.302E-03	.1884	2.884E-03
S	4657(250)	15.54	14.62	3.499E-03	.1532	4.441E-03	.1944	4.302E-03	.1884	2.884E-03
I	2598(250)	16.59	15.67	3.379E-03	.1480	4.289E-03	.1878	4.155E-03	.1819	2.788E-03
S	4658(250)	16.59	15.67	3.379E-03	.1480	4.289E-03	.1878	4.155E-03	.1819	2.788E-03
I	2599(250)	17.70	16.77	3.297E-03	.1430	4.185E-03	.1815	4.016E-03	.1759	2.695E-03
S	4659(250)	17.70	16.77	3.297E-03	.1430	4.185E-03	.1815	4.016E-03	.1759	2.695E-03
I	3000(250)	18.77	17.84	3.166E-03	.1386	4.019E-03	.1760	3.893E-03	.1705	2.612E-03
S	4660(250)	18.77	17.84	3.166E-03	.1386	4.019E-03	.1760	3.893E-03	.1705	2.612E-03
I	3001(250)	19.85	18.92	3.075E-03	.1346	3.903E-03	.1709	3.781E-03	.1656	2.537E-03
S	4661(250)	19.85	18.92	3.075E-03	.1346	3.903E-03	.1709	3.781E-03	.1656	2.537E-03
I	3002(250)	20.62	20.00	2.991E-03	.1310	3.795E-03	.1662	3.676E-03	.1610	2.467E-03
S	4662(250)	20.62	20.00	2.991E-03	.1310	3.795E-03	.1662	3.676E-03	.1610	2.467E-03
I	3003(250)	22.00	21.07	2.914E-03	.1276	3.696E-03	.1619	3.583E-03	.1569	2.404E-03
S	4663(250)	22.00	21.07	2.914E-03	.1276	3.696E-03	.1619	3.583E-03	.1569	2.404E-03
I	3004(250)	23.05	22.12	2.844E-03	.1245	3.609E-03	.1580	3.497E-03	.1531	2.346E-03
S	4664(250)	23.05	22.12	2.844E-03	.1245	3.609E-03	.1580	3.497E-03	.1531	2.346E-03
I	3005(250)	24.15	23.22	2.776E-03	.1215	3.523E-03	.1542	3.413E-03	.1494	2.290E-03
S	4665(250)	24.15	23.22	2.776E-03	.1215	3.523E-03	.1542	3.413E-03	.1494	2.290E-03
I	3006(250)	25.23	24.30	2.713E-03	.1189	3.444E-03	.1508	3.336E-03	.1461	2.238E-03
S	4666(250)	25.23	24.30	2.713E-03	.1189	3.444E-03	.1508	3.336E-03	.1461	2.238E-03
I	3007(250)	26.31	25.38	2.655E-03	.1163	3.370E-03	.1476	3.265E-03	.1430	2.190E-03
S	4667(250)	26.31	25.38	2.655E-03	.1163	3.370E-03	.1476	3.265E-03	.1430	2.190E-03

GROUP CONFIG *** MODEL DESCRIPTION ***

GROUP	CONFIG	MODEL DESCRIPTION	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REF	REQ
72	3	SHOOTP								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	426.9	1261	29.79	.21	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SIREF (RE .040 FT)
94.0	.046	1.981	3791	3.347E-05	7.568E-08	1.987E 06	2.284E-02	1.913E-02

CAMERA (OP(1))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMGACAR)	TRAN(TO)	METAL(TO)
	392					
SIDE(S)	385	250	82	.9591	2.243E-01	2.427GE-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3008(250)	27.41	26.43	2.599E-03	.1138	3.299E-03	.1445	3.194E-03	.1399	2.144E-03
5	4473(250)	27.41	26.48	2.599E-03	.1138	3.299E-03	.1445	3.194E-03	.1399	2.144E-03
1	3009(250)	28.46	27.53	2.549E-03	.1116	3.236E-03	.1417	3.135E-03	.1373	2.103E-03
5	4474(250)	28.49	27.56	2.548E-03	.1116	3.236E-03	.1416	3.133E-03	.1372	2.102E-03
1	3010(250)	29.53	28.61	2.501E-03	.1095	3.176E-03	.1390	3.075E-03	.1346	2.063E-03
5	4475(250)	29.53	28.61	2.501E-03	.1095	3.176E-03	.1390	3.075E-03	.1346	2.063E-03
1	3011(250)	30.61	29.68	2.455E-03	.1075	3.116E-03	.1364	3.014E-03	.1322	2.025E-03
5	4476(250)	30.61	29.68	2.455E-03	.1075	3.116E-03	.1364	3.014E-03	.1322	2.025E-03
1	3012(250)	31.69	30.76	2.412E-03	.1056	3.061E-03	.1340	2.965E-03	.1298	1.990E-03
5	4477(250)	31.71	30.78	2.411E-03	.1056	3.060E-03	.1340	2.964E-03	.1298	1.989E-03
1	3013(250)	32.79	31.86	2.370E-03	.1038	3.008E-03	.1317	2.914E-03	.1276	1.955E-03
5	4478(250)	32.79	31.86	2.370E-03	.1038	3.008E-03	.1317	2.914E-03	.1276	1.955E-03
		33.24		MODEL HAS LEFT CENTERLINE						
1	3014(250)	33.84	32.91	2.332E-03	.1021	2.959E-03	.1296	2.867E-03	.1255	1.923E-03
5	4479(250)	33.84	32.91	2.332E-03	.1021	2.959E-03	.1296	2.867E-03	.1255	1.923E-03
1	3015(250)	34.94	34.01	2.294E-03	.1004	2.911E-03	.1275	2.820E-03	.1235	1.892E-03
5	4480(250)	34.94	34.01	2.294E-03	.1004	2.911E-03	.1275	2.820E-03	.1235	1.892E-03
1	3016(250)	36.02	35.09	2.255E-03	.0989	2.866E-03	.1255	2.776E-03	.1216	1.863E-03
5	4481(250)	36.02	35.09	2.255E-03	.0989	2.866E-03	.1255	2.776E-03	.1216	1.863E-03
1	3017(250)	37.09	36.17	2.224E-03	.0976	2.823E-03	.1236	2.735E-03	.1198	1.835E-03
5	4482(250)	37.09	36.17	2.224E-03	.0976	2.823E-03	.1236	2.735E-03	.1198	1.835E-03
1	3018(250)	38.17	37.24	2.192E-03	.0960	2.782E-03	.1218	2.695E-03	.1180	1.808E-03
5	4483(250)	38.17	37.24	2.192E-03	.0960	2.782E-03	.1218	2.695E-03	.1180	1.808E-03

0392
GP 3
3023 ℄

P_o 425
T_o 940
T_{pc} 250

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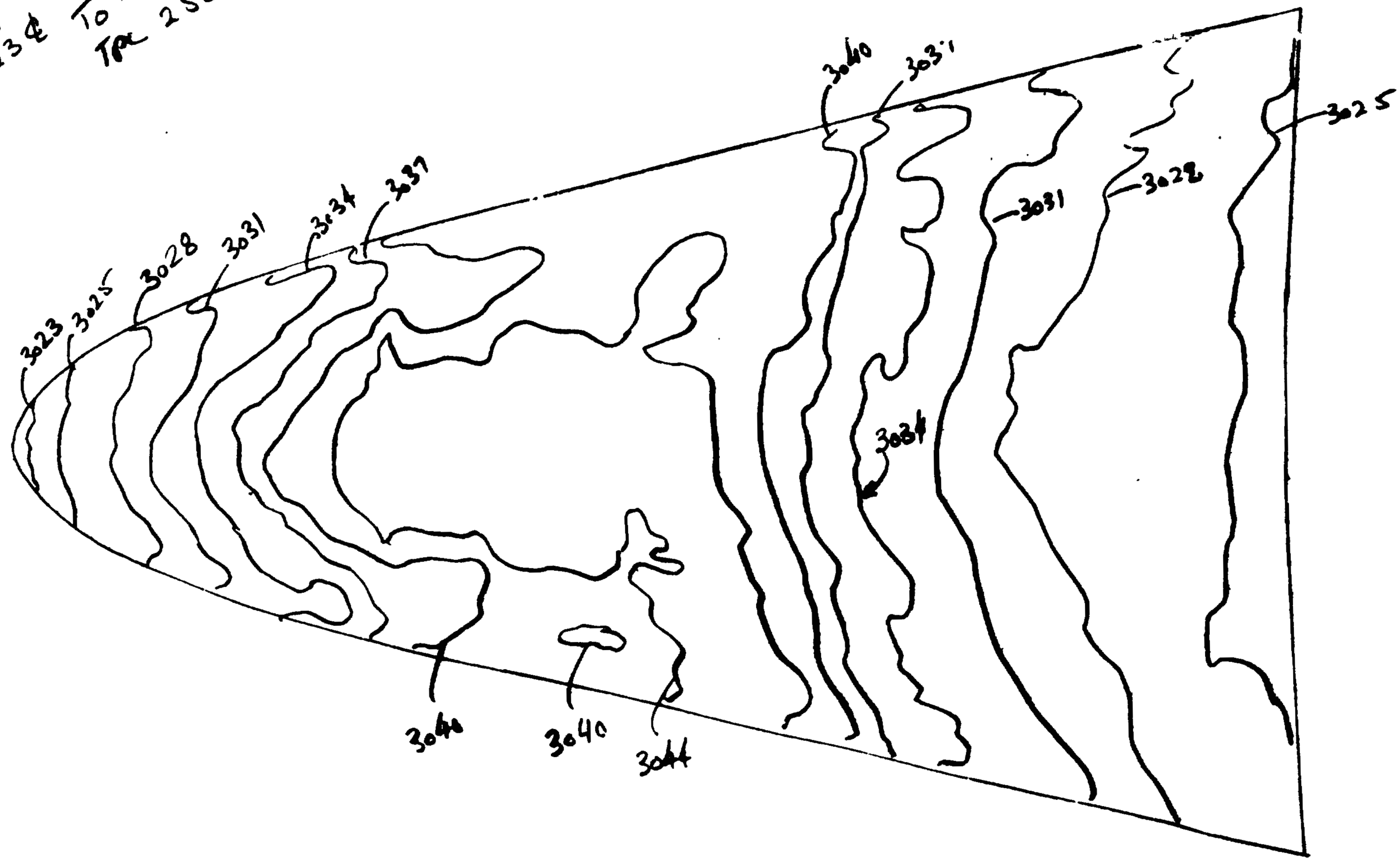

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V41H-82A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WNCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RFR	REV
73	3	SMOOTH								

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	425.1	1290	39.78	-9.78	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)*	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.9	.044	1.973	3789	3.955E-05	7.560E-08	1.592E 06	2.279E-02	1.914E-02

CAMERA (DEG T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAA)	TBAR(TO)	RETA(TO)
10F(T)	392					
SIDE(S)	385	250	93	.0581	2.236E-01	2.4196E-01
56						

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I 3020(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
S 4485(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I 3021(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S 4486(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME = 1.62									
I 3022(250)	2.03	1.69	1.027E-02	.4505	1.303E-02	.5720	1.195E-02	.5245	8.500E-03
S 4487(250)	2.03	1.69	1.027E-02	.4505	1.303E-02	.5720	1.195E-02	.5245	8.500E-03
I 3023(250)	3.70	2.76	8.021E-03	.3520	1.018E-02	.4469	9.337E-03	.4098	6.641E-03
S 4488(250)	3.70	2.76	8.021E-03	.3520	1.018E-02	.4469	9.337E-03	.4098	6.641E-03
56		3.94							
I 3024(250)	4.78	3.84	6.804E-03	.2986	8.634E-03	.3791	7.921E-03	.3476	5.634E-03
S 4489(250)	4.78	3.84	6.804E-03	.2986	8.634E-03	.3791	7.921E-03	.3476	5.634E-03
I 3025(250)	5.66	4.92	6.013E-03	.2639	7.635E-03	.3351	7.000E-03	.3072	4.979E-03
S 4490(250)	5.66	4.92	6.013E-03	.2639	7.635E-03	.3351	7.000E-03	.3072	4.979E-03
I 3026(250)	6.53	5.99	5.407E-03	.2390	6.915E-03	.3035	6.340E-03	.2783	4.510E-03
S 4491(250)	6.53	5.99	5.407E-03	.2390	6.915E-03	.3035	6.340E-03	.2783	4.510E-03
I 3027(250)	8.01	7.07	5.015E-03	.2201	6.367E-03	.2794	5.836E-03	.2562	4.152E-03
S 4492(250)	8.01	7.07	5.015E-03	.2201	6.367E-03	.2794	5.834E-03	.2562	4.152E-03
I 3028(250)	9.09	8.14	4.672E-03	.2050	5.931E-03	.2603	5.438E-03	.2387	3.868E-03
S 4493(250)	9.09	8.14	4.672E-03	.2050	5.931E-03	.2603	5.438E-03	.2387	3.868E-03
I 3029(250)	10.19	9.25	4.365E-03	.1924	5.567E-03	.2443	5.104E-03	.2240	3.631E-03
S 4494(250)	10.19	9.25	4.365E-03	.1924	5.567E-03	.2443	5.104E-03	.2240	3.631E-03
I 3030(250)	11.26	10.32	4.150E-03	.1821	5.288E-03	.2312	4.831E-03	.2120	3.436E-03
S 4495(250)	11.26	10.32	4.150E-03	.1821	5.288E-03	.2312	4.831E-03	.2120	3.436E-03
I 3031(250)	12.29	11.40	3.946E-03	.1733	5.014E-03	.2200	4.597E-03	.2018	3.270E-03
S 4496(250)	12.34	11.41	3.946E-03	.1733	5.014E-03	.2200	4.597E-03	.2018	3.270E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	NED
73	1	SHUOTP								

MACH NO	PO(PSIA)	TO(DEG F)	ALPHA-MODEL	ALPHA-SECTON	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.1	1290	33.78	-9.78	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .060 FT)	SIREF (R= .060 FT)
93.9	.044	1.973	3789	3.985E-05	7.560E-08	1.982E 06	2.279E-02	1.914E-02

CAMERA (DFIT)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAPA)	TBAR(TO)	BETA(TO)
>ICE(S)	392					
>6	385	250	83	.0551	2.236E-01	2.419E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TC)	H(.9TC)/HREF	H(.93*TO)	H(.93*TO)/HREF	ST(TO)
I	3032(250)	13.42	12.67	3.775E-03	.1657	4.792E-03	.2103	4.394E-03	.1929	3.126E-03
>	4697(250)	13.42	12.67	3.775E-03	.1657	4.792E-03	.2103	4.394E-03	.1929	3.126E-03
I	3033(250)	14.07	13.53	3.625E-03	.1591	4.602E-03	.2020	4.220E-03	.1852	3.002E-03
>	4698(250)	14.07	13.53	3.625E-03	.1591	4.602E-03	.2020	4.220E-03	.1852	3.002E-03
I	3034(250)	15.54	14.60	3.429E-03	.1531	4.430E-03	.1944	4.062E-03	.1782	2.889E-03
>	4699(250)	15.54	14.60	3.429E-03	.1531	4.430E-03	.1944	4.062E-03	.1782	2.889E-03
I	3035(250)	16.62	15.68	3.367E-03	.1478	4.275E-03	.1876	3.921E-03	.1721	2.789E-03
>	4700(250)	16.62	15.68	3.367E-03	.1478	4.275E-03	.1876	3.921E-03	.1720	2.789E-03
I	3036(250)	17.70	16.75	3.257E-03	.1429	4.135E-03	.1815	3.792E-03	.1664	2.697E-03
>	4701(250)	17.70	16.75	3.257E-03	.1429	4.135E-03	.1815	3.792E-03	.1664	2.697E-03
I	3037(250)	18.77	17.83	3.157E-03	.1386	4.008E-03	.1759	3.675E-03	.1613	2.614E-03
>	4702(250)	18.77	17.83	3.157E-03	.1386	4.008E-03	.1759	3.675E-03	.1613	2.614E-03
I	3038(250)	19.87	18.93	3.064E-03	.1345	3.890E-03	.1707	3.567E-03	.1565	2.537E-03
>	4703(250)	19.87	18.93	3.064E-03	.1345	3.890E-03	.1707	3.567E-03	.1565	2.537E-03
I	3039(250)	20.92	19.98	2.982E-03	.1309	3.786E-03	.1662	3.472E-03	.1524	2.469E-03
>	4704(250)	20.92	19.98	2.982E-03	.1309	3.786E-03	.1662	3.472E-03	.1524	2.469E-03
I	3040(250)	22.03	21.08	2.903E-03	.1274	3.686E-03	.1618	3.380E-03	.1483	2.404E-03
>	4705(250)	22.03	21.08	2.903E-03	.1274	3.686E-03	.1618	3.380E-03	.1483	2.404E-03
I	3041(250)	23.10	22.16	2.832E-03	.1243	3.596E-03	.1578	3.297E-03	.1447	2.345E-03
>	4706(250)	23.10	22.16	2.832E-03	.1243	3.596E-03	.1578	3.297E-03	.1447	2.345E-03
I	3042(250)	24.18	23.24	2.766E-03	.1214	3.511E-03	.1541	3.220E-03	.1413	2.290E-03
>	4707(250)	24.18	23.24	2.766E-03	.1214	3.511E-03	.1541	3.220E-03	.1413	2.290E-03
I	3043(250)	25.23	24.29	2.705E-03	.1187	3.435E-03	.1507	3.149E-03	.1382	2.240E-03
>	4708(250)	25.23	24.29	2.705E-03	.1187	3.435E-03	.1507	3.149E-03	.1382	2.240E-03
I	3044(250)	26.33	25.39	2.646E-03	.1161	3.359E-03	.1474	3.080E-03	.1352	2.191E-03
>	4709(250)	26.33	25.39	2.646E-03	.1161	3.359E-03	.1474	3.080E-03	.1352	2.191E-03

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V41H-R2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HER	HEW
73	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.1	1290	39.78	-0.78	38.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .040 FT)	STREF (R= .040 FT)
93.5	.044	1.973	3789	1.985E-05	7.500E-08	1.582E 06	2.279E-02	1.914E-02

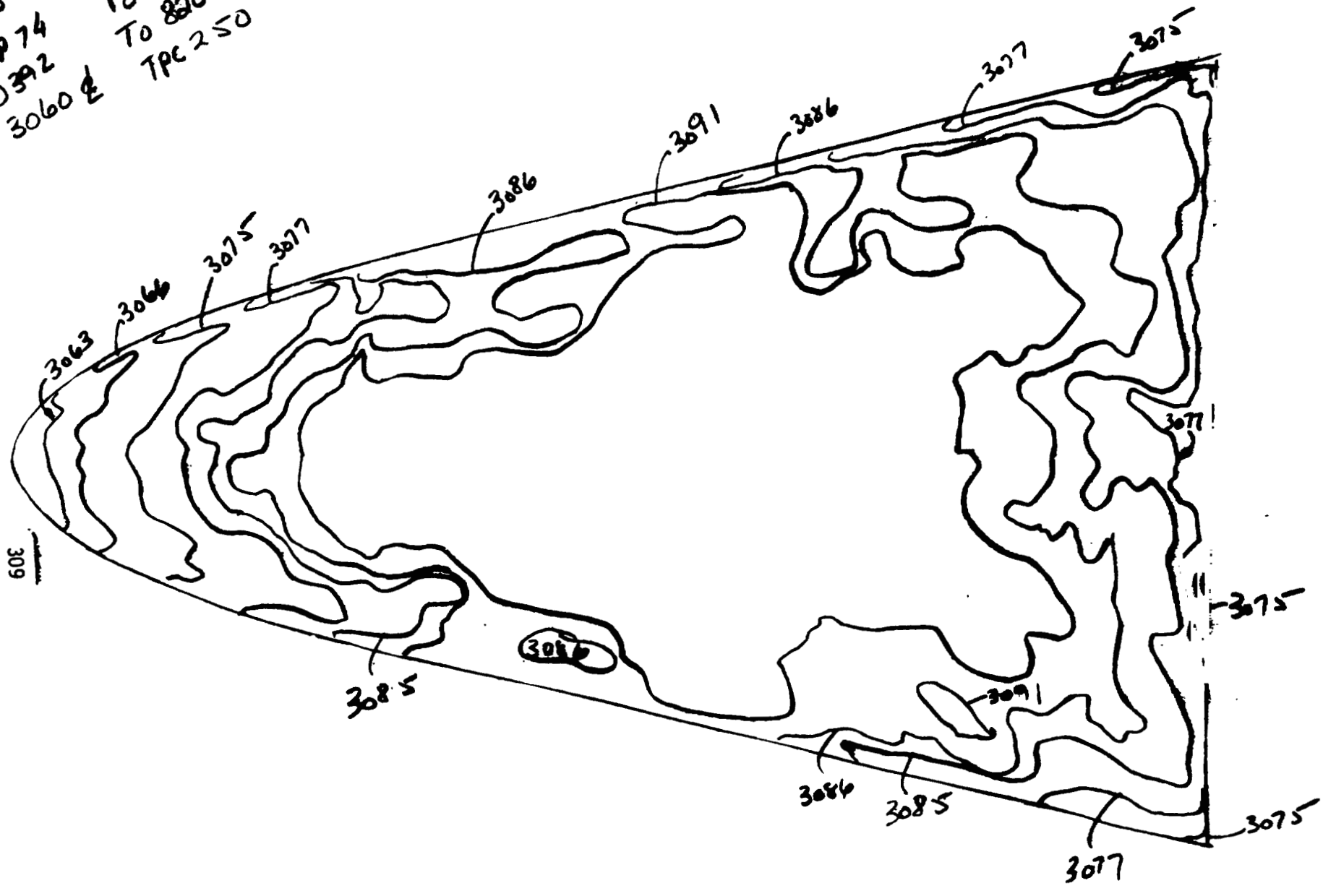
CAMERA (OFFT)	HOLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOQACAR)	TRAB(TO)	RETA(TO)
SILE(S)	392					
56	385	250	83	.0551	2.236E-01	2.419E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3145(250)	27.41	26.47	2.592E-03	.1137	3.290E-03	.1444	3.017E-03	.1324	2.146E-03
S	4713(250)	27.41	26.47	2.592E-03	.1137	3.290E-03	.1444	3.017E-03	.1324	2.146E-03
I	3046(250)	28.48	27.54	2.540E-03	.1115	3.225E-03	.1415	2.957E-03	.1296	2.104E-03
S	4711(250)	28.48	27.54	2.540E-03	.1115	3.225E-03	.1415	2.957E-03	.1296	2.104E-03
I	3047(250)	29.53	28.59	2.493E-03	.1094	3.165E-03	.1389	2.902E-03	.1274	2.064E-03
S	4712(250)	29.53	28.59	2.493E-03	.1094	3.165E-03	.1389	2.902E-03	.1274	2.064E-03
I	3048(250)	30.64	29.69	2.447E-03	.1074	3.106E-03	.1363	2.845E-03	.1250	2.026E-03
S	4713(250)	30.64	29.69	2.447E-03	.1074	3.106E-03	.1363	2.845E-03	.1250	2.026E-03
I	3049(250)	31.69	30.75	2.404E-03	.1055	3.053E-03	.1340	2.794E-03	.1228	1.991E-03
S	4714(250)	31.69	30.75	2.404E-03	.1055	3.053E-03	.1340	2.794E-03	.1228	1.991E-03
I	305 (250)	32.76	31.82	2.363E-03	.1037	3.001E-03	.1317	2.751E-03	.1207	1.957E-03
S	4715(250)	32.76	31.82	2.363E-03	.1037	2.999E-03	.1316	2.750E-03	.1207	1.956E-03
		33.26		MODEL WAS LEFT CENTERLINE						
I	3051(250)	33.86	32.92	2.324E-03	.1020	2.950E-03	.1295	2.705E-03	.1187	1.924E-03
S	4715(250)	33.86	32.92	2.324E-03	.1020	2.950E-03	.1295	2.705E-03	.1187	1.924E-03
I	3052(250)	34.92	33.97	2.287E-03	.1004	2.904E-03	.1274	2.663E-03	.1169	1.894E-03
S	4717(250)	34.92	33.97	2.287E-03	.1004	2.904E-03	.1274	2.663E-03	.1169	1.894E-03
I	3053(250)	35.99	35.05	2.252E-03	.0988	2.859E-03	.1255	2.621E-03	.1150	1.865E-03
S	4718(250)	35.99	35.05	2.252E-03	.0988	2.859E-03	.1255	2.621E-03	.1150	1.865E-03
I	3054(250)	37.07	36.13	2.218E-03	.0973	2.816E-03	.1236	2.582E-03	.1133	1.837E-03
S	4719(250)	37.07	36.13	2.218E-03	.0973	2.816E-03	.1236	2.582E-03	.1133	1.837E-03
I	3055(250)	38.14	37.20	2.186E-03	.0959	2.775E-03	.1218	2.545E-03	.1117	1.810E-03
S	4720(250)	38.14	37.20	2.186E-03	.0959	2.775E-03	.1218	2.545E-03	.1117	1.810E-03

0392
GP 74
0392
3060 ℄

Po 265
To 820
TPC 250

$\alpha = 40$



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V412-824 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REW
76	1	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.95	265.0	1277	39.79	-9.70	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SL-MGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHREF (RH= .063 FT)	SIREF (RH= .060 FT)
93.6	.028	1.259	3769	2.542E-05	7.538E-08	1.271E 06	1.814E-02	2.387E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	TRAN(TO)	HETA(TO)
IOFIT	392					
SICE(S)	385	250	97	.0551	2.232E-01	2.6144E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91O)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
S	4722(250)	.45		MODEL HAS NOT REACHED CENTERLINE						
I	3057(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3058(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4723(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.65							
I	3059(250)	2.63	1.74	1.020E-02	.5623	1.249E-02	.7162	1.190E-02	.6558	1.322E-02
S	4724(250)	2.63	1.74	1.020E-02	.5623	1.249E-02	.7162	1.190E-02	.6558	1.322E-02
I	3060(250)	3.70	2.78	7.983E-03	.4400	1.017E-02	.5605	9.312E-03	.5132	1.034E-02
S	4725(250)	3.70	2.78	7.983E-03	.4400	1.017E-02	.5605	9.312E-03	.5132	1.034E-02
SG			3.45							
I	3061(250)	4.76	3.83	6.799E-03	.3748	8.661E-03	.4774	7.931E-03	.4371	8.811E-03
S	4726(250)	4.76	3.83	6.799E-03	.3748	8.661E-03	.4774	7.931E-03	.4371	8.811E-03
I	3062(250)	5.83	4.90	6.007E-03	.3311	7.652E-03	.4218	7.007E-03	.3862	7.784E-03
S	4727(250)	5.83	4.90	6.007E-03	.3311	7.652E-03	.4218	7.007E-03	.3862	7.784E-03
I	3063(250)	6.91	5.98	5.440E-03	.2999	6.929E-03	.3819	6.345E-03	.3497	7.049E-03
S	4728(250)	6.91	5.98	5.440E-03	.2999	6.929E-03	.3819	6.345E-03	.3497	7.049E-03
I	3064(250)	7.01	7.08	4.999E-03	.2755	6.367E-03	.3510	5.831E-03	.3214	6.478E-03
S	4729(250)	7.01	7.08	4.999E-03	.2755	6.367E-03	.3510	5.831E-03	.3214	6.478E-03
I	3065(250)	9.09	8.16	4.659E-03	.2567	5.933E-03	.3270	5.433E-03	.2994	6.035E-03
S	4730(250)	9.09	8.16	4.659E-03	.2567	5.933E-03	.3270	5.433E-03	.2994	6.035E-03
I	3066(250)	10.16	9.23	4.378E-03	.2413	5.576E-03	.3074	5.106E-03	.2815	5.673E-03
S	4731(250)	10.16	9.23	4.378E-03	.2413	5.576E-03	.3074	5.106E-03	.2815	5.673E-03
I	3067(250)	11.24	10.31	4.103E-03	.2264	5.277E-03	.2909	4.832E-03	.2664	5.369E-03
S	4732(250)	11.24	10.31	4.103E-03	.2264	5.277E-03	.2909	4.832E-03	.2664	5.369E-03
I	3068(250)	12.34	11.41	3.938E-03	.2171	5.016E-03	.2765	4.593E-03	.2532	5.103E-03
S	4733(250)	12.34	11.41	3.938E-03	.2171	5.016E-03	.2765	4.593E-03	.2532	5.103E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
76	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.95	265.9	1277	39.79	-9.79	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	SREF (RE .040 FT)
93.6	.028	1.255	3769	2.542E-05	7.539E-08	3.271E 04	1.416E-02	2.387E-02

CAMERA	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAR)	TRAN(TO)	HETA(TO)
TOP(T)	392					
SIDE(S)	385	250	97	.9551	2.232E-01	2.414E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
T	3069(250)	13.39	12.46	3.702E-03	.2377	4.809E-03	.2446	4.395E-03	.2423	4.883E-03
S	4734(250)	13.39	12.46	3.708E-03	.2377	4.809E-03	.2446	4.395E-03	.2423	4.883E-03
T	3070(250)	14.47	13.54	3.015E-03	.1943	4.605E-03	.2338	4.217E-03	.2324	4.685E-03
S	4735(250)	14.47	13.54	3.015E-03	.1943	4.605E-03	.2338	4.217E-03	.2324	4.685E-03
T	3071(250)	15.54	14.62	3.406E-03	.1918	4.432E-03	.2443	4.054E-03	.2237	4.509E-03
S	4736(250)	15.57	14.66	3.477E-03	.1916	4.429E-03	.2441	4.055E-03	.2235	4.505E-03
T	3072(250)	16.62	15.69	3.355E-03	.1951	4.278E-03	.2358	3.917E-03	.2159	4.352E-03
S	4737(250)	16.62	15.69	3.355E-03	.1951	4.278E-03	.2358	3.917E-03	.2159	4.352E-03
T	3073(250)	17.70	16.77	3.249E-03	.1791	4.138E-03	.2281	3.789E-03	.2089	4.210E-03
S	4738(250)	17.70	16.77	3.249E-03	.1791	4.138E-03	.2281	3.789E-03	.2089	4.210E-03
T	3074(250)	18.77	17.84	3.149E-03	.1736	4.011E-03	.2211	3.673E-03	.2025	4.081E-03
S	4739(250)	18.77	17.84	3.149E-03	.1736	4.011E-03	.2211	3.673E-03	.2025	4.081E-03
T	3075(250)	19.85	18.92	3.055E-03	.1686	3.896E-03	.2147	3.567E-03	.1966	3.963E-03
S	4740(250)	19.85	18.92	3.055E-03	.1686	3.896E-03	.2147	3.567E-03	.1966	3.963E-03
T	3076(250)	20.92	20.00	2.975E-03	.1640	3.799E-03	.2089	3.470E-03	.1913	3.855E-03
S	4741(250)	20.92	20.00	2.975E-03	.1640	3.799E-03	.2089	3.470E-03	.1913	3.855E-03
T	3077(250)	22.00	21.07	2.895E-03	.1597	3.691E-03	.2035	3.380E-03	.1863	3.755E-03
S	4742(250)	22.00	21.07	2.895E-03	.1597	3.691E-03	.2035	3.380E-03	.1863	3.755E-03
T	3078(250)	23.08	22.15	2.827E-03	.1558	3.600E-03	.1985	3.297E-03	.1817	3.663E-03
S	4743(250)	23.08	22.15	2.827E-03	.1558	3.600E-03	.1985	3.297E-03	.1817	3.663E-03
T	3079(250)	24.15	23.23	2.760E-03	.1522	3.516E-03	.1938	3.220E-03	.1775	3.577E-03
S	4744(250)	24.15	23.23	2.760E-03	.1522	3.516E-03	.1938	3.220E-03	.1775	3.577E-03
T	3080(250)	25.23	24.30	2.699E-03	.1487	3.437E-03	.1895	3.146E-03	.1735	3.497E-03
S	4745(250)	25.23	24.30	2.699E-03	.1487	3.437E-03	.1895	3.146E-03	.1735	3.497E-03
T	3081(250)	26.31	25.38	2.641E-03	.1456	3.364E-03	.1854	3.080E-03	.1698	3.422E-03
S	4746(250)	26.31	25.38	2.641E-03	.1456	3.364E-03	.1854	3.080E-03	.1698	3.422E-03

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

V41H-M2A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REF	MED
76	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.95	265.9	1277	39.79	-9.79	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SREF (H= .040 FT)
93.6	.028	1.255	3769	2.542E-05	7.538E-08	1.371E 06	1.814E-02	2.387E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAMA)	TRAN(TO)	BETA(TO)
10F(T)	392					
5(LE(S)	385	250	87	.0591	2.232E-01	2.4144E-01
56						

	SIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
S	4747(250)	27.36	28.63	2.588E-03	.1426	3.296E-03	.1817	3.018E-03	.1664	3.353E-03
I	3082(250)	27.38	28.65	2.587E-03	.1426	3.295E-03	.1816	3.017E-03	.1663	3.352E-03
I	3083(250)	28.63	27.51	2.537E-03	.1398	3.231E-03	.1781	2.954E-03	.1631	3.287E-03
S	4748(250)	28.63	27.51	2.537E-03	.1398	3.231E-03	.1781	2.954E-03	.1631	3.287E-03
I	3084(250)	29.51	28.59	2.488E-03	.1372	3.170E-03	.1747	2.902E-03	.1600	3.224E-03
S	4749(250)	29.51	28.59	2.488E-03	.1372	3.170E-03	.1747	2.902E-03	.1600	3.224E-03
I	3085(250)	30.59	29.64	2.443E-03	.1346	3.112E-03	.1715	2.849E-03	.1570	3.165E-03
S	4750(250)	30.59	29.64	2.443E-03	.1346	3.112E-03	.1715	2.849E-03	.1570	3.165E-03
I	3086(250)	31.66	30.73	2.403E-03	.1323	3.057E-03	.1685	2.794E-03	.1543	3.109E-03
S	4751(250)	31.66	30.73	2.403E-03	.1323	3.057E-03	.1685	2.794E-03	.1543	3.109E-03
I	3087(250)	32.74	31.81	2.359E-03	.1300	3.004E-03	.1656	2.751E-03	.1516	3.056E-03
S	4752(250)	32.74	31.81	2.359E-03	.1300	3.004E-03	.1656	2.751E-03	.1516	3.056E-03
I	3088(250)	33.81	32.89	2.320E-03	.1279	2.955E-03	.1629	2.708E-03	.1491	3.006E-03
S	4753(250)	33.81	32.89	2.320E-03	.1279	2.955E-03	.1629	2.708E-03	.1491	3.006E-03
I	3089(250)	34.92	33.99	2.282E-03	.1258	2.907E-03	.1602	2.662E-03	.1467	2.957E-03
S	4754(250)	34.92	33.99	2.282E-03	.1258	2.907E-03	.1602	2.662E-03	.1467	2.957E-03
I	3090(250)	35.99	35.06	2.247E-03	.1238	2.862E-03	.1577	2.620E-03	.1444	2.911E-03
S	4755(250)	35.99	35.06	2.247E-03	.1238	2.862E-03	.1577	2.620E-03	.1444	2.911E-03
I	3091(250)	37.07	36.14	2.213E-03	.1220	2.819E-03	.1554	2.581E-03	.1423	2.869E-03
S	4756(250)	37.07	36.14	2.213E-03	.1220	2.819E-03	.1554	2.581E-03	.1423	2.869E-03
		37.94		MODEL HAS LEFT CENTERLINE						
I	3092(250)	38.12	37.19	2.181E-03	.1202	2.779E-03	.1532	2.544E-03	.1402	2.827E-03
S	4757(250)	38.12	37.19	2.181E-03	.1202	2.779E-03	.1532	2.544E-03	.1402	2.827E-03
I	3093(250)	39.22	38.29	2.150E-03	.1185	2.738E-03	.1509	2.508E-03	.1382	2.786E-03
S	4758(250)	39.22	38.29	2.150E-03	.1185	2.738E-03	.1509	2.508E-03	.1382	2.786E-03

V418-R2A

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GHCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEB	HEO
76	3	SMOOTH								

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENU	ROLL-MODEL	YAW
7.95	265.9	1277	39.79	-9.79	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SIREF (H= .040 FT)
93.4	.0294	1.255	3764	2.542E-05	7.538E-08	1.271E 06	1.816E-02	2.387E-02

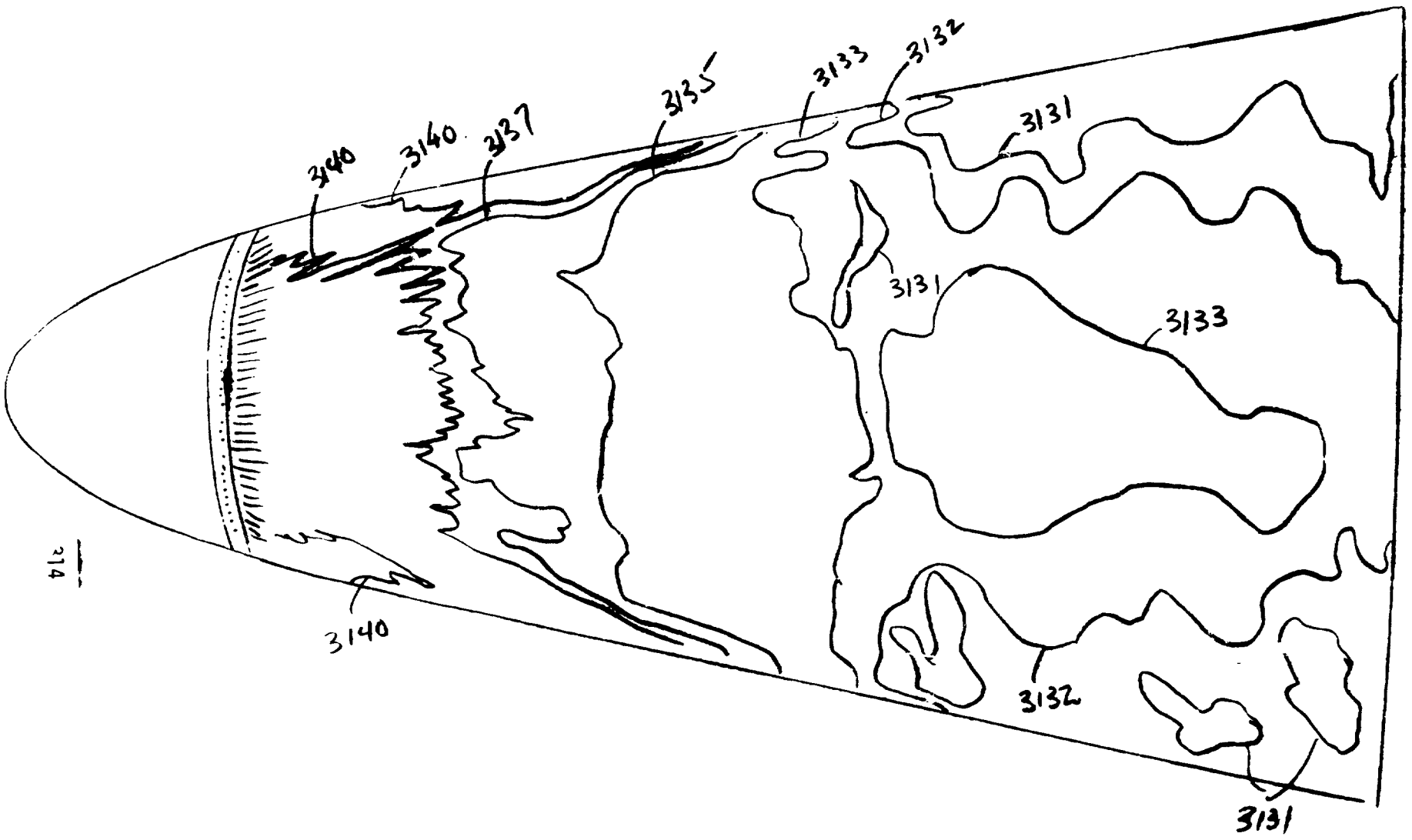
LAMEFA	MODEL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOQACK)	TRAN(TO)	BETA(TO)
105(1)	392					
SICE(S)	385	250	87	.0551	2.232E-01	2.4144E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.93*TO)	H(.93*TO)/HREF	ST(TO)
I	394*(250)	43.27	39.34	2.121E-03	.1169	2.701E-03	.1489	2.474E-03	.1364	2.744E-03
S	475*(250)	43.27	39.34	2.121E-03	.1169	2.701E-03	.1489	2.474E-03	.1364	2.748E-03
I	399*(250)	41.25	42.42	2.092E-03	.1153	2.665E-03	.1469	2.441E-03	.1345	2.711E-03
S	476*(250)	41.25	42.42	2.092E-03	.1153	2.665E-03	.1469	2.441E-03	.1345	2.711E-03
I	309*(250)	42.45	41.52	2.055E-03	.1139	2.630E-03	.1449	2.408E-03	.1327	2.675E-03
S	478(250)	42.45	41.52	2.055E-03	.1139	2.630E-03	.1449	2.408E-03	.1327	2.675E-03
I	309*(250)	43.50	42.57	2.039E-03	.1124	2.597E-03	.1431	2.375E-03	.1311	2.642E-03
S	479(250)	43.50	42.57	2.039E-03	.1124	2.597E-03	.1431	2.375E-03	.1311	2.642E-03

407
GP 75
3127 ℄

$P_0 = 320$
$T_0 = 830$
TPC 250

α = 30



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V41A-R2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP CONFIG *** MODEL DESCRIPTION ***

/S 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	HED
			S	.110	.039	7.111E 05	4.886E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.90	320.4	1290	29.90	.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	STREF (IN .040 FT)
94.4	.034	1.534	3789	1.014E-05	7.590E-08	1.503E 06	1.989E-02	2.194E-02

LAMFRA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HRQACR*)	TRAN(TO)	BETA(TO)
>ICE(S)	406					
>0	393	250	70	.0617	2.277E-01	2.473E-01

	PIC	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3123(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
>	4788(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	3124(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	4789(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	3125(250)	2.63	1.71	1.105E-02	.5850	1.480E-02	.7838	1.432E-02	.7187	1.244E-02
>	4790(250)	2.63	1.71	1.105E-02	.5850	1.480E-02	.7838	1.432E-02	.7187	1.244E-02
I	3126(250)	3.70	2.79	9.135E-03	.4592	1.160E-02	.5830	1.122E-02	.5641	9.924E-03
>	4791(250)	3.70	2.79	9.135E-03	.4592	1.160E-02	.5830	1.122E-02	.5641	9.924E-03
>0			3.95							
I	3127(250)	4.81	3.89	7.735E-03	.3889	9.820E-03	.4937	9.502E-03	.4777	8.404E-03
>	4792(250)	4.81	3.89	7.735E-03	.3889	9.820E-03	.4937	9.502E-03	.4777	8.404E-03
I	3128(250)	5.88	4.97	6.866E-03	.3442	8.692E-03	.4369	8.410E-03	.4228	7.438E-03
>	4793(250)	5.88	4.97	6.866E-03	.3442	8.692E-03	.4369	8.410E-03	.4228	7.438E-03
I	3129(250)	6.96	6.04	6.207E-03	.3120	7.880E-03	.3961	7.624E-03	.3833	6.744E-03
>	4794(250)	6.96	6.04	6.207E-03	.3120	7.880E-03	.3961	7.624E-03	.3833	6.744E-03
I	3130(250)	8.01	7.10	5.729E-03	.2880	7.273E-03	.3656	7.037E-03	.3536	6.224E-03
>	4795(250)	8.01	7.10	5.729E-03	.2880	7.273E-03	.3656	7.037E-03	.3536	6.224E-03
I	3131(250)	9.11	8.20	5.330E-03	.2680	6.767E-03	.3402	6.547E-03	.3291	5.791E-03
>	4796(250)	9.11	8.20	5.330E-03	.2680	6.767E-03	.3402	6.547E-03	.3291	5.791E-03
I	3132(250)	10.19	9.27	5.011E-03	.2519	6.362E-03	.3198	6.156E-03	.3095	5.445E-03
>	4797(250)	10.19	9.27	5.011E-03	.2519	6.362E-03	.3198	6.156E-03	.3095	5.445E-03
I	3133(250)	11.26	10.35	4.744E-03	.2385	6.022E-03	.3027	5.827E-03	.2929	5.154E-03
>	4798(250)	11.26	10.35	4.744E-03	.2385	6.022E-03	.3027	5.827E-03	.2929	5.154E-03
I	3134(250)	12.34	11.43	4.515E-03	.2270	5.731E-03	.2881	5.546E-03	.2788	4.905E-03
>	4799(250)	12.34	11.43	4.515E-03	.2270	5.731E-03	.2881	5.546E-03	.2788	4.905E-03

V41H-A2A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	REO
74	11	TRIP				S	.110	.039	7.111E 05	4.886E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.96	320.4	1290	29.90	.02	30.00	0	0

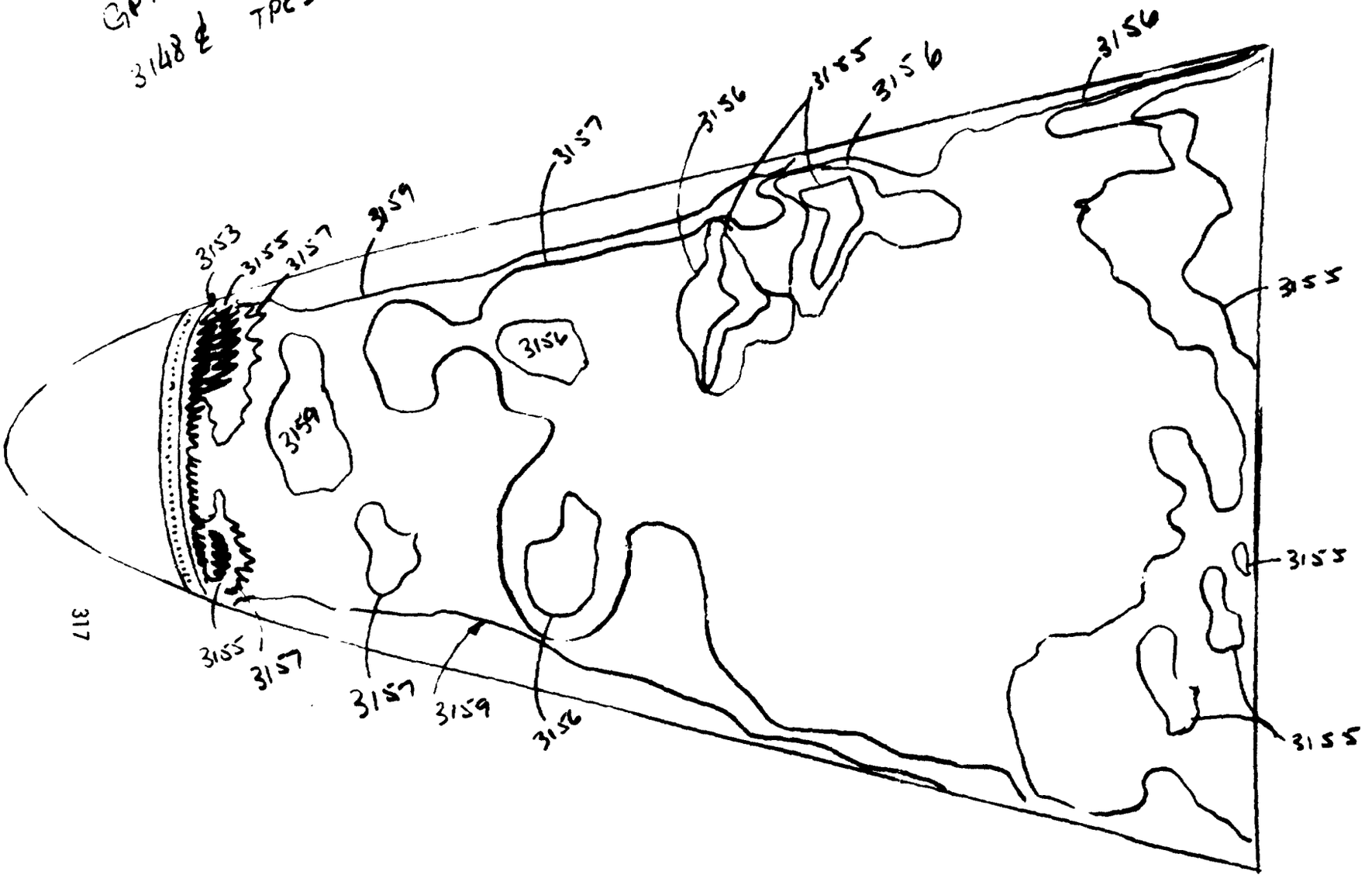
T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
94.4	.034	1.504	3789	3.014E-05	7.546E-08	1.503E 06	1.989E-02	2.194E-02

CAPFRA (OF(T) SICE(S) 36)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	TBAR(TO)	BETA(TO)
	406					
	393	250	79	.0617	2.277E-01	2.4734E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3135(250)	13.39	12.48	4.320E-03	.2172	5.485E-03	.2757	5.307E-03	.2668	4.694E-03
S	4R00(250)	13.39	12.48	4.320E-03	.2172	5.485E-03	.2757	5.307E-03	.2668	4.694E-03
I	3136(250)	14.47	13.55	4.165E-03	.2084	5.262E-03	.2646	5.092E-03	.2560	4.504E-03
S	4R01(250)	14.47	13.55	4.165E-03	.2084	5.262E-03	.2646	5.092E-03	.2560	4.504E-03
I	3137(250)	15.54	14.63	3.990E-03	.2006	5.065E-03	.2546	4.901E-03	.2464	4.335E-03
S	4R02(250)	15.54	14.63	3.990E-03	.2006	5.065E-03	.2546	4.901E-03	.2464	4.335E-03
I	3138(250)	16.62	15.71	3.851E-03	.1936	4.889E-03	.2458	4.730E-03	.2378	4.184E-03
S	4R03(250)	16.62	15.71	3.851E-03	.1936	4.889E-03	.2458	4.730E-03	.2378	4.184E-03
I	3139(250)	17.70	16.78	3.725E-03	.1873	4.729E-03	.2377	4.576E-03	.2300	4.047E-03
S	4R04(250)	17.70	16.78	3.725E-03	.1873	4.729E-03	.2377	4.576E-03	.2300	4.047E-03
I	3140(250)	18.77	17.86	3.611E-03	.1815	4.584E-03	.2305	4.436E-03	.2230	3.923E-03
S	4R05(250)	18.77	17.86	3.611E-03	.1815	4.584E-03	.2305	4.436E-03	.2230	3.923E-03
		19.27		MODEL WAS LEFT CENTERLINE						
I	3141(250)	19.87	18.96	3.505E-03	.1762	4.449E-03	.2237	4.305E-03	.2164	3.808E-03
S	4R06(250)	19.87	18.96	3.505E-03	.1762	4.449E-03	.2237	4.305E-03	.2164	3.808E-03
I	3142(250)	20.92	20.01	3.411E-03	.1715	4.331E-03	.2177	4.190E-03	.2107	3.706E-03
S	4R07(250)	20.92	20.01	3.411E-03	.1715	4.331E-03	.2177	4.190E-03	.2107	3.706E-03
I	3143(250)	22.00	21.09	3.323E-03	.1671	4.219E-03	.2121	4.082E-03	.2052	3.611E-03
S	4R08(250)	22.00	21.09	3.323E-03	.1671	4.219E-03	.2121	4.082E-03	.2052	3.611E-03

0406 $P_0 = 320$
GP76 $T_0 = 830$
3148 ℄ $TPC = 250$

$\alpha = .0$



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V41H-H24

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
74	11	TRIP				5	.110	.039	7.185E 05	4.937E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.4	1284	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .060 FT)
93.5	.034	1.508	3780	3.03RE-05	7.560E-08	1.519E 06	1.991E-02	2.185E-02

CAMERA (OF(T) SIDE(S) 56)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAR)	TRAR(TO)	BETA(TO)
	.06					
	293	300	R1	.0634	2.948E-01	3.4421E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3145(300)	.08		MODEL HAS NOT REACHED CENTERLINE						
S	4R10(300)	.08		MODEL HAS NOT REACHED CENTERLINE						
I	3146(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4R11(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
I	3147(300)	2.63	1.71	1.672E-02	.8398	2.174E-02	1.0920	1.972E-02	.9908	1.802E-02
S	4R12(300)	2.63	1.71	1.672E-02	.8398	2.174E-02	1.0920	1.972E-02	.9908	1.802E-02
I	3148(300)	3.70	2.79	1.310E-02	.6583	1.704E-02	.8559	1.546E-02	.7766	1.413E-02
S	4R13(300)	3.70	2.79	1.310E-02	.6583	1.704E-02	.8559	1.546E-02	.7766	1.413E-02
SG		3.95								
I	3149(300)	4.76	3.86	1.117E-02	.5611	1.452E-02	.7295	1.318E-02	.6619	1.204E-02
S	4R14(300)	4.78	3.87	1.113E-02	.5592	1.447E-02	.7271	1.313E-02	.6597	1.200E-02
I	3150(300)	5.86	4.96	9.866E-03	.4966	1.280E-02	.6431	1.162E-02	.5835	1.061E-02
S	4R15(300)	5.86	4.96	9.866E-03	.4966	1.280E-02	.6431	1.162E-02	.5835	1.061E-02
I	3151(300)	6.93	6.03	8.923E-03	.4482	1.160E-02	.5828	1.053E-02	.5288	9.618E-03
S	4R16(300)	6.93	6.03	8.923E-03	.4482	1.160E-02	.5828	1.053E-02	.5288	9.618E-03
I	3152(300)	8.01	7.18	8.218E-03	.4128	1.069E-02	.5368	9.695E-03	.4870	8.859E-03
S	4R17(300)	8.01	7.18	8.218E-03	.4128	1.069E-02	.5368	9.695E-03	.4870	8.859E-03
I	3153(300)	9.09	8.17	7.658E-03	.3847	9.957E-03	.5002	9.034E-03	.4538	8.255E-03
S	4R18(300)	9.09	8.17	7.658E-03	.3847	9.957E-03	.5002	9.034E-03	.4538	8.255E-03
I	3154(300)	10.16	9.25	7.199E-03	.3616	9.360E-03	.4702	8.492E-03	.4266	7.760E-03
S	4R19(300)	10.16	9.25	7.199E-03	.3616	9.360E-03	.4702	8.492E-03	.4266	7.760E-03
I	3155(300)	11.26	10.35	6.805E-03	.3418	8.848E-03	.4445	8.028E-03	.4033	7.335E-03
S	4R20(300)	11.26	10.35	6.805E-03	.3418	8.848E-03	.4445	8.028E-03	.4033	7.335E-03
I	3156(300)	12.34	11.43	6.476E-03	.3253	8.421E-03	.4230	7.640E-03	.3838	6.981E-03
S	4R21(300)	12.34	11.43	6.476E-03	.3253	8.421E-03	.4230	7.640E-03	.3838	6.981E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
24	11	TRIP				5	.110	.039	7.185E 05	6.937E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.96	321.4	1284	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (RW .048 FT)	STREF (RW .048 FT)
93.6	.234	1.508	3780	3.038E-05	7.500E-08	1.919E 06	1.991E-02	2.185E-02

LAPFGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TRAN(TO)	HETA(TO)
10F(T)	406					
>ICE(S)	393	300	81	.0694	2.948E-01	3.4421E-01
>G						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.9 TO)/HREF	ST(TO)
I	315?(300)	13.42	12.58	6.191E-03	.3110	8.050E-03	.4044	7.304E-03	.3669	6.674E-03
>	4822(300)	13.42	12.58	6.191E-03	.3110	8.050E-03	.4044	7.304E-03	.3669	6.674E-03
I	315R(300)	14.49	13.58	5.961E-03	.2986	7.725E-03	.3880	7.009E-03	.3521	6.404E-03
>	4823(300)	14.49	13.58	5.961E-03	.2986	7.725E-03	.3880	7.009E-03	.3521	6.404E-03
I	3159(300)	15.57	14.65	5.719E-03	.2873	7.436E-03	.3735	6.746E-03	.3389	6.164E-03
>	4824(300)	15.57	14.65	5.719E-03	.2873	7.436E-03	.3735	6.746E-03	.3389	6.164E-03
I	3160(300)	16.64	15.73	5.520E-03	.2773	7.177E-03	.3605	6.511E-03	.3271	5.950E-03
>	4825(300)	16.64	15.73	5.520E-03	.2773	7.177E-03	.3605	6.511E-03	.3271	5.950E-03
		16.64		MODEL HAS LEFT CENTERLINE						
I	3161(300)	17.75	16.83	5.336E-03	.2681	6.938E-03	.3485	6.295E-03	.3162	5.752E-03
>	4826(300)	17.75	16.83	5.336E-03	.2681	6.938E-03	.3485	6.295E-03	.3162	5.752E-03
I	3162(300)	18.82	17.91	5.173E-03	.2599	6.726E-03	.3379	6.103E-03	.3066	5.576E-03
>	4827(300)	18.82	17.91	5.173E-03	.2599	6.726E-03	.3379	6.103E-03	.3066	5.576E-03

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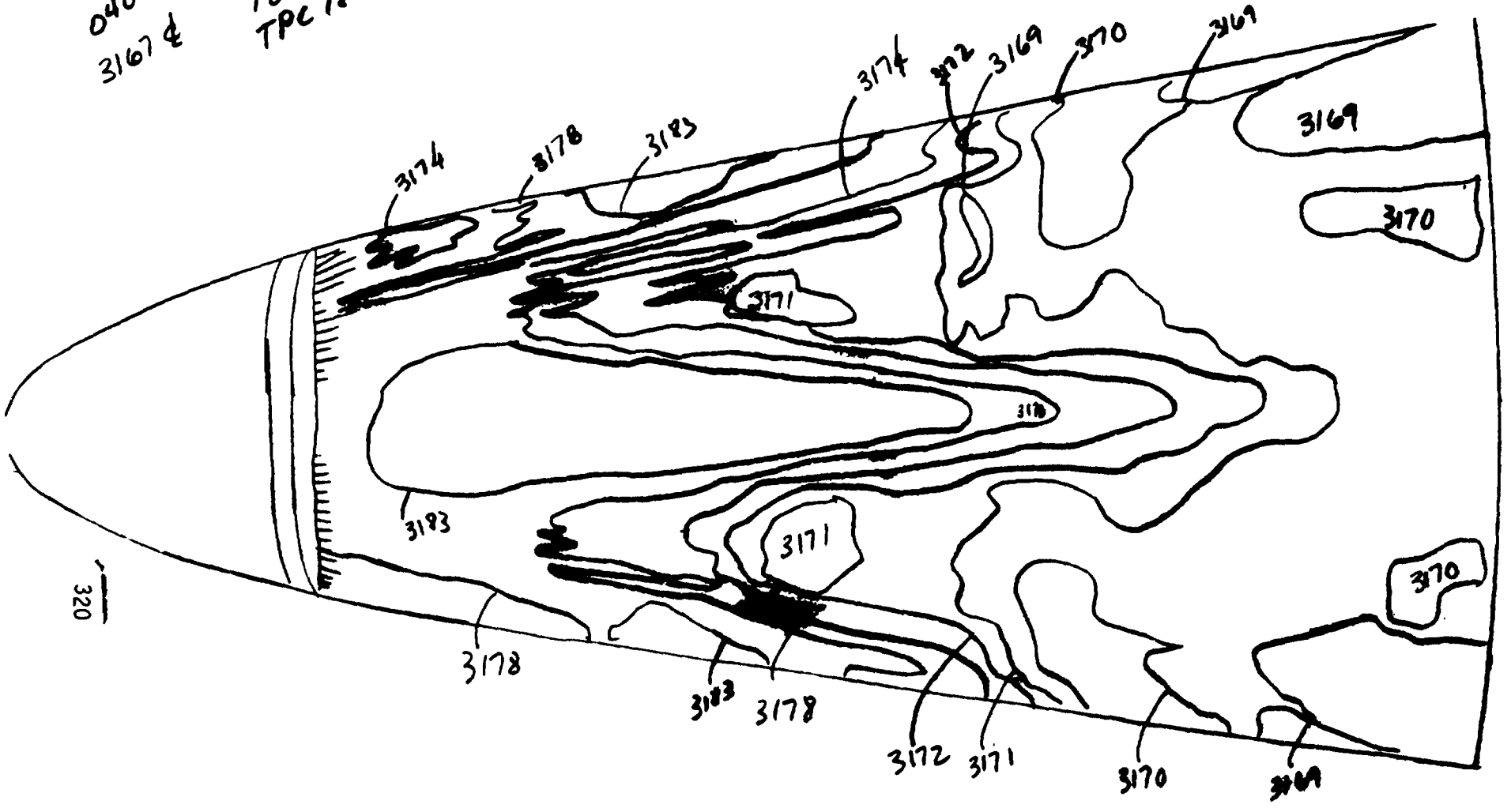
TPC 185



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NASA-RI OH 56

V41R-H20

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

10- 8-74 PAGE 1

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
77	11	TRIP				5	.110	.039	7.143E 05	4.908E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.96	322.3	1291	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STHEF (R= .040 FT)
94.4	.036	1.512	3790	3.025E-05	7.603E-08	1.510E 06	1.995E-02	2.188E-02

LAPEGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TRAN(TO)	BETA(TO)
(OP(T)	406					
>ICE(S)	293	175	85	.0573	1.206E-01	1.1825E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3166(175)	.68		MODEL HAS NOT REACHED CENTERLINE						
>	4P29(175)	.68		MODEL HAS NOT REACHED CENTERLINE						
I	3165(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	4P30(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.61							
I	3166(175)	2.63	1.71	5.174E-03	.2593	6.404E-03	.3209	6.524E-03	.3269	5.613E-03
>	4P31(175)	2.63	1.71	5.174E-03	.2593	6.404E-03	.3209	6.524E-03	.3269	5.613E-03
I	3167(175)	3.73	2.82	4.038E-03	.2023	4.997E-03	.2504	5.091E-03	.2551	4.380E-03
>	4P32(175)	3.73	2.82	4.038E-03	.2023	4.997E-03	.2504	5.091E-03	.2551	4.380E-03
>G			3.98							
I	3168(175)	4.78	3.87	3.445E-03	.1727	4.264E-03	.2137	4.344E-03	.2177	3.738E-03
>	4P33(175)	4.78	3.87	3.445E-03	.1727	4.264E-03	.2137	4.344E-03	.2177	3.738E-03
I	3169(175)	5.68	4.97	3.040E-03	.1523	3.762E-03	.1885	3.833E-03	.1921	3.298E-03
>	4P34(175)	5.68	4.97	3.040E-03	.1523	3.762E-03	.1885	3.833E-03	.1921	3.298E-03
I	3170(175)	6.63	6.02	2.762E-03	.1384	3.418E-03	.1713	3.482E-03	.1745	2.996E-03
>	4P35(175)	6.63	6.02	2.762E-03	.1384	3.418E-03	.1713	3.482E-03	.1745	2.996E-03
I	3171(175)	8.03	7.12	2.539E-03	.1272	3.142E-03	.1575	3.201E-03	.1604	2.755E-03
>	4P36(175)	8.03	7.12	2.539E-03	.1272	3.142E-03	.1575	3.201E-03	.1604	2.755E-03
I	3172(175)	9.11	8.20	2.367E-03	.1186	[illegible]	.1468	2.984E-03	.1495	2.567E-03
>	4P37(175)	9.11	8.20	2.367E-03	.1186	2.929E-03	.1468	2.984E-03	.1495	2.567E-03
I	3173(175)	10.19	9.27	2.225E-03	.1115	2.754E-03	.1380	2.805E-03	.1406	2.414E-03
>	4P38(175)	10.21	9.39	2.222E-03	.1114	2.750E-03	.1378	2.802E-03	.1404	2.410E-03
I	3174(175)	11.29	10.37	2.104E-03	.1054	2.603E-03	.1305	2.652E-03	.1329	2.282E-03
>	4P39(175)	11.29	10.37	2.104E-03	.1054	2.603E-03	.1305	2.652E-03	.1329	2.282E-03
I	3175(175)	12.36	11.45	2.002E-03	.1003	2.478E-03	.1242	2.525E-03	.1265	2.172E-03
>	4P40(175)	12.36	11.45	2.002E-03	.1003	2.478E-03	.1242	2.525E-03	.1265	2.172E-03

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V41R-A20 VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	RED
77	11	TRIP				S	.110	.079	7.143E 05	4.908E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.96	322.3	1291	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	WREF (W= .040 FT)	STREF (W= .040 FT)
94.4	.014	1.512	3790	9.079E-05	7.603E-08	1.510E 06	1.995E-02	2.180E-02

CAMERA (OF(S))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACKR)	TRAN(TO)	BETA(TO)
SICE(S)	406					
56	293	175	85	.0573	1.206E-01	1.1825E-01

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/WREF	H(.9TO)	H(.9TO)/WREF	H(.892TO)	H(.892TO)/WREF	ST(TO)
I	3176(175)	13.44	12.53	1.914E-03	.0959	2.369E-03	.1187	2.414E-03	.1210	2.077E-03
S	4861(175)	13.44	12.53	1.914E-03	.0959	2.369E-03	.1187	2.414E-03	.1210	2.077E-03
I	3177(175)	14.52	13.60	1.837E-03	.0921	2.274E-03	.1139	2.316E-03	.1161	1.993E-03
S	4862(175)	14.52	13.60	1.837E-03	.0921	2.274E-03	.1139	2.316E-03	.1161	1.993E-03
I	3178(175)	15.59	14.68	1.7[illegible]8E-03	.0886	2.189E-03	.1097	2.230E-03	.1117	1.918E-03
S	4863(175)	15.59	14.68	1.708E-03	.0886	2.189E-03	.1097	2.230E-03	.1117	1.918E-03
I	3179(175)	16.67	15.76	1.707E-03	.0855	2.113E-03	.1059	2.152E-03	.1079	1.852E-03
S	4864(175)	16.67	15.76	1.707E-03	.0855	2.113E-03	.1059	2.152E-03	.1079	1.852E-03
I	3180(175)	17.77	16.86	1.650E-03	.0827	2.042E-03	.1024	2.081E-03	.1043	1.790E-03
S	4865(175)	17.77	16.86	1.650E-03	.0827	2.042E-03	.1024	2.081E-03	.1043	1.790E-03
I	3181(175)	18.82	17.91	1.601E-03	.0802	1.982E-03	.0993	2.019E-03	.1012	1.737E-03
S	4866(175)	18.82	17.91	1.601E-03	.0802	1.982E-03	.0993	2.019E-03	.1012	1.737E-03
		19.85		MODEL WAS LEFT CENTERLINE						
I	3182(175)	19.52	19.01	1.554E-03	.0779	1.923E-03	.0964	1.959E-03	.0982	1.686E-03
S	4867(175)	19.52	19.01	1.554E-03	.0779	1.923E-03	.0964	1.959E-03	.0982	1.686E-03
I	3183(175)	21.00	20.09	1.512E-03	.0758	1.871E-03	.0938	1.906E-03	.0955	1.640E-03
S	4868(175)	21.00	20.09	1.512E-03	.0758	1.871E-03	.0938	1.906E-03	.0955	1.640E-03
I	3184(175)	22.08	21.16	1.473E-03	.0738	1.823E-03	.0914	1.857E-03	.0931	1.598E-03
S	4869(175)	22.08	21.16	1.473E-03	.0738	1.823E-03	.0914	1.857E-03	.0931	1.598E-03

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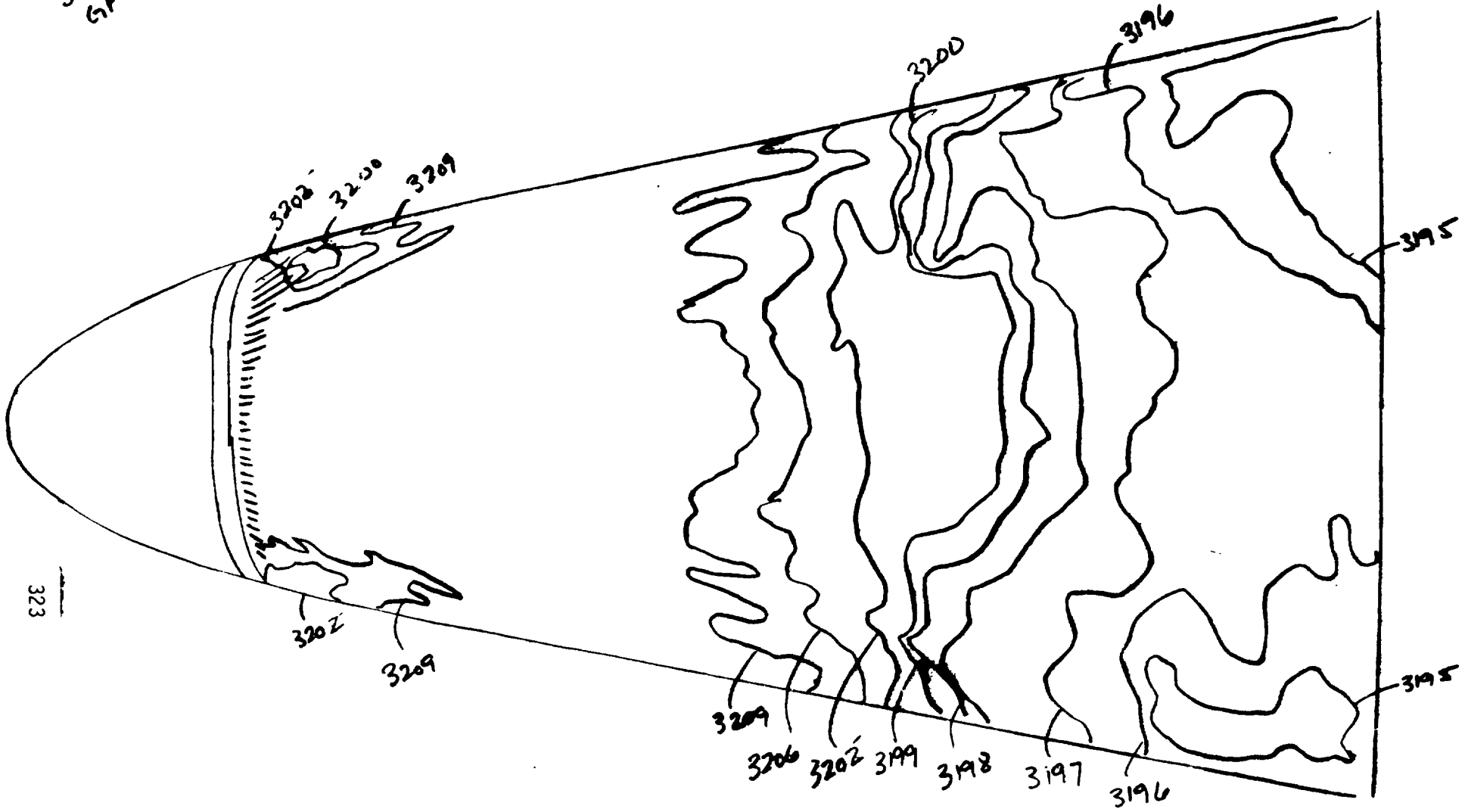

NASA-RI OH 54

V41R-828

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	AER	NED
78	11	TRIP				S	.110	.039	6.831E 05	4.144E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREWEND	ROLL-MODEL	YAW
7.95	266.6	1277	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
93.6	.029	1.258	3764	2.550E-05	7.536E-08	1.275E 06	1.817E-02	2.383E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAK)	TRAN(TO)	BETA(TO)
(OF(T)	406					
>ICE(S)	393	250	84	.0617	2.266E-01	2.4505E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3186(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	4851(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3187(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	4852(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
IN-ECT TIME =		1.63								
I	3188(250)	2.63	1.71	1.158E-02	.6377	1.475E-02	.8122	1.427E-02	.7855	1.497E-02
>	4853(250)	2.63	1.71	1.158E-02	.6377	1.475E-02	.8122	1.427E-02	.7855	1.497E-02
I	3189(250)	3.70	2.79	9.080E-03	.4999	1.157E-02	.6367	1.118E-02	.6157	1.173E-02
>	4854(250)	3.70	2.79	9.080E-03	.4998	1.157E-02	.6347	1.118E-02	.6157	1.17 E-02
>6		3.95								
I	3190(250)	4.78	3.87	7.714E-03	.4246	9.825E-03	.5409	9.502E-03	.5231	9.967E-03
>	4855(250)	4.78	3.87	7.714E-03	.4246	9.825E-03	.5409	9.502E-03	.5231	9.967E-03
I	3191(250)	5.86	4.94	6.822E-03	.3756	8.690E-03	.4784	8.404E-03	.4626	8.816E-03
>	4856(250)	5.86	4.94	6.822E-03	.3756	8.690E-03	.4784	8.404E-03	.4626	8.816E-03
I	3192(250)	6.93	6.02	6.183E-03	.3403	7.875E-03	.4335	7.616E-03	.4192	7.989E-03
>	4857(250)	6.93	6.02	6.183E-03	.3403	7.875E-03	.4335	7.616E-03	.4192	7.989E-03
I	3193(250)	8.01	7.10	5.694E-03	.3135	7.253E-03	.3993	7.014E-03	.3861	7.358E-03
>	4858(250)	8.01	7.10	5.694E-03	.3135	7.253E-03	.3993	7.014E-03	.3861	7.358E-03
I	3194(250)	9.09	8.17	5.306E-03	.2921	6.759E-03	.3721	6.536E-03	.3598	6.857E-03
>	4859(250)	9.11	8.20	5.298E-03	.2917	6.748E-03	.3715	6.526E-03	.3593	6.846E-03
>	4860(250)	10.16	9.24	4.988E-03	.2746	6.353E-03	.3497	6.144E-03	.3382	6.445E-03
I	3195(250)	10.19	9.27	4.981E-03	.2742	6.345E-03	.3493	6.136E-03	.3378	6.437E-03
I	3196(250)	11.26	10.35	4.715E-03	.2596	6.006E-03	.3306	5.808E-03	.3197	6.093E-03
>	4861(250)	11.26	10.35	4.715E-03	.2596	6.006E-03	.3306	5.808E-03	.3197	6.093E-03
I	3197(250)	12.31	11.40	4.492E-03	.2473	5.722E-03	.3150	5.534E-03	.3046	5.805E-03
>	4862(250)	12.31	11.40	4.492E-03	.2473	5.722E-03	.3150	5.534E-03	.3046	5.805E-03

NASA-R1 DH 54

V418-R2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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WRCUF CONFIG *** MODEL DESCRIPTION ***

TA 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	RED
			S	.110	.039	6.031E 05	4.144E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.95	266.6	1277	30.00	-.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.6	.028	1.258	3769	2.558E-05	7.536E-08	1.275E 06	1.817E-02	2.383E-02

CAPERA (DF(T) SICE(S) >6	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACKK)	TRAR(TO)	BETA(TO)
	486					
	393	250	84	.0617	7.266E-01	2.458SE-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3198(250)	13.42	12.58	4.240E-03	.2362	5.464E-03	.3008	5.285E-03	.2909	5.544E-03
S	4863(250)	13.42	12.58	4.240E-03	.2362	5.464E-03	.3008	5.285E-03	.2909	5.544E-03
I	3199(250)	14.47	13.58	4.120E-03	.2268	5.248E-03	.2889	5.075E-03	.2794	5.324E-03
S	4864(250)	14.47	13.58	4.120E-03	.2268	5.248E-03	.2889	5.075E-03	.2794	5.324E-03
I	3200(250)	15.57	14.68	3.962E-03	.2181	5.047E-03	.2778	4.881E-03	.2687	5.120E-03
S	4865(250)	15.57	14.68	3.962E-03	.2181	5.047E-03	.2778	4.881E-03	.2687	5.120E-03
I	3201(250)	16.64	15.73	3.825E-03	.2105	4.871E-03	.2682	4.711E-03	.2593	4.942E-03
S	4866(250)	16.64	15.73	3.825E-03	.2105	4.871E-03	.2682	4.711E-03	.2593	4.942E-03
I	3202(250)	17.72	16.81	3.700E-03	.2037	4.713E-03	.2594	4.558E-03	.2509	4.781E-03
S	4867(250)	17.72	16.81	3.700E-03	.2037	4.713E-03	.2594	4.558E-03	.2509	4.781E-03
I	3203(250)	18.80	17.88	3.587E-03	.1975	4.569E-03	.2515	4.418E-03	.2432	4.635E-03
S	4868(250)	18.80	17.88	3.587E-03	.1975	4.569E-03	.2515	4.418E-03	.2432	4.635E-03
I	3204(250)	19.87	18.94	3.484E-03	.1918	4.437E-03	.2443	4.291E-03	.2362	4.502E-03
S	4869(250)	19.87	18.94	3.484E-03	.1918	4.437E-03	.2443	4.291E-03	.2362	4.502E-03
I	3205(250)	20.95	20.04	3.389E-03	.1866	4.316E-03	.2376	4.174E-03	.2298	4.379E-03
S	4870(250)	20.95	20.04	3.389E-03	.1866	4.316E-03	.2376	4.174E-03	.2298	4.379E-03
I	3206(250)	22.03	21.11	3.301E-03	.1817	4.205E-03	.2315	4.067E-03	.2239	4.266E-03
S	4871(250)	22.03	21.11	3.301E-03	.1817	4.205E-03	.2315	4.067E-03	.2239	4.266E-03
I	3207(250)	23.10	22.19	3.220E-03	.1773	4.102E-03	.2258	3.967E-03	.2184	4.161E-03
S	4872(250)	23.10	22.19	3.220E-03	.1773	4.102E-03	.2258	3.967E-03	.2184	4.161E-03
I	3208(250)	24.20	23.29	3.143E-03	.1730	4.004E-03	.2204	3.872E-03	.2131	4.062E-03
S	4873(250)	24.20	23.29	3.143E-03	.1730	4.004E-03	.2204	3.872E-03	.2131	4.062E-03
I	3209(250)	25.28	24.37	3.073E-03	.1692	3.914E-03	.2155	3.785E-03	.2084	3.971E-03
S	4874(250)	25.28	24.37	3.073E-03	.1692	3.914E-03	.2155	3.785E-03	.2084	3.971E-03
I	3210(250)	26.36	25.44	3.007E-03	.1656	3.830E-03	.2109	3.704E-03	.2039	3.886E-03
S	4875(250)	26.36	25.44	3.007E-03	.1656	3.830E-03	.2109	3.704E-03	.2039	3.886E-03

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REN	RED
78	11	TRIP				5	.110	.039	6.031E 05	6.144E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.95	266.6	1277	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (W= .040 FT)
93.6	.028	1.258	3769	2.550E-05	7.536E-08	1.275E 06	1.817E-02	2.383E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHCACAR)	TBAR(TO)	BETA(TO)
1OF(T)	400					
>ICE(S)	293	250	86	.0617	2.266E-01	2.4585E-01
>B						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3211(250)	27.43	26.52	2.946E-03	.1622	3.752E-03	.2065	3.628E-03	.1997	3.806E-03
>	4876(250)	27.43	26.52	2.946E-03	.1622	3.752E-03	.2065	3.628E-03	.1997	3.806E-03
1	3212(250)	28.51	27.59	2.888E-03	.1590	3.678E-03	.2025	3.557E-03	.1958	3.731E-03
>	4877(250)	28.51	27.59	2.888E-03	.1590	3.678E-03	.2025	3.557E-03	.1958	3.731E-03
		29.58		MODEL WAS LEFT CENTERLINE						
1	3213(250)	29.61	28.70	2.832E-03	.1559	3.607E-03	.1986	3.488E-03	.1920	3.659E-03
>	4878(250)	29.61	28.70	2.832E-03	.1559	3.607E-03	.1986	3.488E-03	.1920	3.659E-03
1	3214(250)	30.69	29.77	2.760E-03	.1530	3.541E-03	.1949	3.424E-03	.1885	3.592E-03
>	4879(250)	30.69	29.77	2.760E-03	.1530	3.541E-03	.1949	3.424E-03	.1885	3.592E-03
1	3215(250)	31.76	30.85	2.731E-03	.1503	3.479E-03	.1915	3.364E-03	.1852	3.529E-03
>	4880(250)	31.76	30.85	2.731E-03	.1503	3.479E-03	.1915	3.364E-03	.1852	3.529E-03

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V41A-828

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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WRGUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			RER	RED
TP	11	TRIP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
						S	.110	.039	5.960E 05	4.101E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.95	265.3	1282	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.0	.028	1.292	3776	2.528E-05	7.564E-08	1.262E 06	1.813E-02	2.395E-02

CAPEGA (DP(T))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TBAR(TO)	BETA(TO)
	406					
SICE(S)	393	300	91	.0636	2.861E-01	3.3076E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3217(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
S	4882(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3218(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	4883(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.69								
I	3219(300)	2.63	1.71	1.607E-02	.8860	2.091E-02	1.1534	1.897E-02	1.0460	2.084E-02
S	4884(300)	2.63	1.71	1.607E-02	.8860	2.091E-02	1.1534	1.897E-02	1.0460	2.084E-02
I	3220(300)	3.70	2.79	1.259E-02	.6944	1.639E-02	.9041	1.487E-02	.8199	1.633E-02
S	4885(300)	3.70	2.79	1.259E-02	.6944	1.639E-02	.9041	1.487E-02	.8199	1.633E-02
SG		3.95								
I	3221(300)	4.78	3.87	1.070E-02	.5899	1.393E-02	.7680	1.263E-02	.6965	1.388E-02
S	4886(300)	4.78	3.87	1.070E-02	.5899	1.393E-02	.7680	1.263E-02	.6965	1.388E-02
I	3222(300)	5.86	4.94	9.462E-03	.5218	1.232E-02	.6793	1.117E-02	.6160	1.227E-02
S	4887(300)	5.88	4.97	9.438E-03	.5205	1.229E-02	.6776	1.114E-02	.6145	1.224E-02
I	3223(300)	6.56	6.04	8.556E-03	.4719	1.114E-02	.6143	1.010E-02	.5571	1.110E-02
S	4888(300)	6.56	6.04	8.556E-03	.4719	1.114E-02	.6143	1.010E-02	.5571	1.110E-02
I	3224(300)	8.03	7.12	7.883E-03	.4348	1.026E-02	.5660	9.307E-03	.5133	1.023E-02
S	4889(300)	8.03	7.12	7.863E-03	.4348	1.026E-02	.5660	9.307E-03	.5133	1.02[illegible]E-02
I	3225(300)	9.11	8.20	7.348E-03	.4052	9.566E-03	.5275	8.675E-03	.4784	9.531E-03
S	4890(300)	9.11	8.2[illegible]	7.348E-03	.4052	9.566E-03	.5275	8.675E-03	.4784	9.531E-03
I	3226(300)	10.19	9.27	6.908E-03	.3810	8.993E-03	.4960	8.156E-03	.4498	8.961E-03
S	4891(300)	10.19	9.27	6.908E-03	.3810	8.993E-03	.4960	8.156E-03	.4498	8.961E-03
I	3227(300)	11.29	10.37	6.531E-03	.3602	8.503E-03	.4689	7.711E-03	.4252	8.472E-03
S	4892(300)	11.29	10.37	6.531E-03	.3602	8.503E-03	.4689	7.711E-03	.4252	8.472E-03
I	3228(300)	12.36	11.44	6.217E-03	.3428	8.093E-03	.4463	7.339E-03	.4048	8.064E-03
S	4893(300)	12.36	11.44	6.217E-03	.3428	8.093E-03	.4463	7.339E-03	.4048	8.064E-03

GRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
79	11	TRIP				5	.110	.039	5.960E 05	4.101E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.95	265.3	1202	39.97	-9.97	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.0	.028	1.252	3776	2.528E-05	7.566E-08	1.262E 06	1.813E-02	2.395E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAK)	TBAR(TO)	BETA(TO)
(OF(T)	406					
>ICE(S)	393	300	91	.0636	2.861E-01	3.3976E-01
>B						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3229(300)	13.44	12.59	5.944E-03	.3278	7.738E-03	.4267	7.017E-03	.3870	7.710E-03
>	4894(300)	13.44	12.59	5.944E-03	.3278	7.738E-03	.4267	7.017E-03	.3870	7.710E-03
I	3230(300)	14.54	13.69	5.698E-03	.3143	7.419E-03	.4091	6.728E-03	.3710	7.392E-03
>	4895(300)	14.54	13.69	5.698E-03	.3143	7.419E-03	.4091	6.728E-03	.3710	7.392E-03
I	3231(300)	15.59	14.68	5.491E-03	.3028	7.148E-03	.3942	6.482E-03	.3575	7.122E-03
>	4896(300)	15.59	14.68	5.491E-03	.3028	7.148E-03	.3942	6.482E-03	.3575	7.122E-03
>	4897(300)	16.67	15.76	5.300E-03	.2923	6.908E-03	.3805	6.257E-03	.3451	6.875E-03
I	3232(300)	16.69	15.78	5.246E-03	.2920	6.894E-03	.3802	6.252E-03	.3448	6.869E-03
I	3233(300)	17.77	16.86	5.124E-03	.2826	6.670E-03	.3679	6.049E-03	.3336	6.646E-03
>	4898(300)	17.77	16.86	5.124E-03	.2826	6.670E-03	.3679	6.049E-03	.3336	6.646E-03
I	3234(300)	18.85	17.93	4.968E-03	.2740	6.467E-03	.3567	5.865E-03	.3234	6.444E-03
>	4899(300)	18.85	17.93	4.968E-03	.2740	6.467E-03	.3567	5.865E-03	.3234	6.444E-03
I	3235(300)	19.92	19.01	4.825E-03	.2661	6.281E-03	.3464	5.696E-03	.3141	6.259E-03
>	4900(300)	19.92	19.01	4.825E-03	.2661	6.281E-03	.3464	5.696E-03	.3141	6.259E-03
		20.15		MODEL WAS LEFT CENTERLINE						
I	3236(300)	20.97	20.06	4.697E-03	.2590	6.115E-03	.3372	5.545E-03	.3058	6.092E-03
>	4901(300)	20.97	20.06	4.697E-03	.2590	6.115E-03	.3372	5.545E-03	.3058	6.092E-03
I	3237(300)	22.08	21.16	4.573E-03	.2522	5.953E-03	.3283	5.394E-03	.2977	5.932E-03
>	4902(300)	22.08	21.16	4.573E-03	.2522	5.953E-03	.3283	5.394E-03	.2977	5.932E-03
I	3238(300)	23.15	22.24	4.461E-03	.2460	5.808E-03	.3203	5.267E-03	.2904	5.787E-03
>	4903(300)	23.15	22.24	4.461E-03	.2460	5.808E-03	.3203	5.267E-03	.2904	5.787E-03

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V41R-R2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	REO
00	11	TRIP				5	.110	.039	6.000E 05	4.127E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTON	ALPHA-PREREND	ROLL-MODEL	YAW
7.95	265.6	1277	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .060 FT)	STREF (W= .060 FT)
93.6	.028	1.254	3769	2.539E-05	7.538E-08	1.270E 06	1.913E-02	2.3ABE-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHOACAK)	TRAN(TO)	BETA(TO)
IOP(T)	406					
>ICE(S)	393	175	81	.0573	1.277E-01	1.2603E-01
>6						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	STITOO
I	3240(175)	.50		MODEL HAS NOT REACHED CENTERLINE						
>	4905(175)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	3241(175)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	4906(175)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
I	3242(175)	2.65	1.74	5.475E-03	.3020	6.790E-03	.3745	6.919E-03	.3816	7.131E-03
>	4907(175)	2.65	1.74	5.475E-03	.3020	6.790E-03	.3745	6.919E-03	.3816	7.131E-03
I	3243(175)	3.73	2.82	4.303E-03	.2373	5.337E-03	.2943	5.434E-03	.2999	5.605E-03
>	4908(175)	3.73	2.82	4.303E-03	.2373	5.337E-03	.2943	5.439E-03	.2999	5.605E-03
>6		4.88								
I	3244(175)	4.83	3.92	3.649E-03	.2012	4.525E-03	.2496	4.611E-03	.2543	4.752E-03
>	4909(175)	4.83	3.92	3.649E-03	.2012	4.525E-03	.2496	4.611E-03	.2543	4.752E-03
I	3245(175)	5.91	4.99	3.232E-03	.1782	4.008E-03	.2210	4.084E-03	.2252	4.209E-03
>	4910(175)	5.91	4.99	3.232E-03	.1782	4.008E-03	.2210	4.084E-03	.2252	4.209E-03
I	3246(175)	6.98	6.07	2.931E-03	.1617	3.635E-03	.2005	3.704E-03	.2043	3.818E-03
>	4911(175)	6.98	6.07	2.931E-03	.1617	3.635E-03	.2005	3.704E-03	.2043	3.818E-03
I	3247(175)	8.06	7.15	2.701E-03	.1490	3.350E-03	.1848	3.414E-03	.1883	3.519E-03
>	4912(175)	8.06	7.15	2.701E-03	.1490	3.350E-03	.1848	3.414E-03	.1883	3.519E-03
I	3248(175)	9.14	8.22	2.518E-03	.1389	3.123E-03	.1723	3.183E-03	.1755	3.280E-03
>	4913(175)	9.14	8.22	2.518E-03	.1389	3.123E-03	.1723	3.183E-03	.1755	3.280E-03
I	3249(175)	10.21	9.30	2.368E-03	.1306	2.937E-03	.1620	2.993E-03	.1651	3.085E-03
>	4914(175)	10.21	9.30	2.368E-03	.1306	2.937E-03	.1620	2.993E-03	.1651	3.085E-03
I	3250(175)	11.31	10.40	2.239E-03	.1235	2.777E-03	.1532	2.830E-03	.1561	2.917E-03
>	4915(175)	11.31	10.40	2.239E-03	.1235	2.777E-03	.1532	2.830E-03	.1561	2.917E-03
I	3251(175)	12.39	11.48	2.132E-03	.1176	2.644E-03	.1458	2.694E-03	.1486	2.777E-03
>	4916(175)	12.39	11.48	2.132E-03	.1176	2.644E-03	.1458	2.694E-03	.1486	2.777E-03

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VON KARMAN GAS DYNAMICS FACILITY
V41H-02A 50 INCH HYPERSONIC TUNNEL B

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
00	11	TRIP				5	.110	.039	6.006E 05	6.127E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.95	285.6	1277	19.99	18.81	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.6	.028	1.254	3769	2.535E-05	7.534E-08	1.278E 06	1.813E-02	2.380E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TRAR(TO)	BETA(TO)
(OF(T)	404					
SICE(S)	393	175	81	.0573	1.277E-01	1.260JE-01
>0						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3252(175)	13.47	12.58	2.038E-03	.1124	2.528E-03	.1396	2.576E-03	.1421	2.655E-03
>	4917(175)	13.47	12.58	2.038E-03	.1124	2.528E-03	.1396	2.576E-03	.1421	2.655E-03
I	3253(175)	14.57	13.68	1.954E-03	.1078	2.424E-03	.1337	2.470E-03	.1362	2.546E-03
>	4918(175)	14.57	13.68	1.954E-03	.1078	2.424E-03	.1337	2.470E-03	.1362	2.546E-03
I	3254(175)	15.64	14.75	1.882E-03	.1038	2.334E-03	.1287	2.378E-03	.1311	2.451E-03
>	4919(175)	15.64	14.75	1.882E-03	.1038	2.334E-03	.1287	2.378E-03	.1311	2.451E-03
I	3255(175)	16.72	15.81	1.816E-03	.1002	2.253E-03	.1242	2.296E-03	.1266	2.366E-03
>	4920(175)	16.72	15.81	1.816E-03	.1002	2.253E-03	.1242	2.296E-03	.1266	2.366E-03
		17.34		MODEL WAS LEFT CENTERLINE						
I	3256(175)	17.82	16.91	1.756E-03	.0969	2.178E-03	.1201	2.220E-03	.1224	2.287E-03
>	4921(175)	17.82	16.91	1.756E-03	.0969	2.178E-03	.1201	2.220E-03	.1224	2.287E-03
>	4922(175)	18.67	17.96	1.704E-03	.0940	2.113E-03	.1166	2.154E-03	.1188	2.220E-03
I	3257(175)	18.60	17.90	1.703E-03	.0939	2.112E-03	.1165	2.152E-03	.1187	2.218E-03
I	3258(175)	19.65	19.03	1.655E-03	.0913	2.053E-03	.1132	2.092E-03	.1154	2.156E-03
>	4923(175)	19.65	19.03	1.655E-03	.0913	2.053E-03	.1132	2.092E-03	.1154	2.156E-03

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3263 ℄ To 815
Po 210
TPC 175

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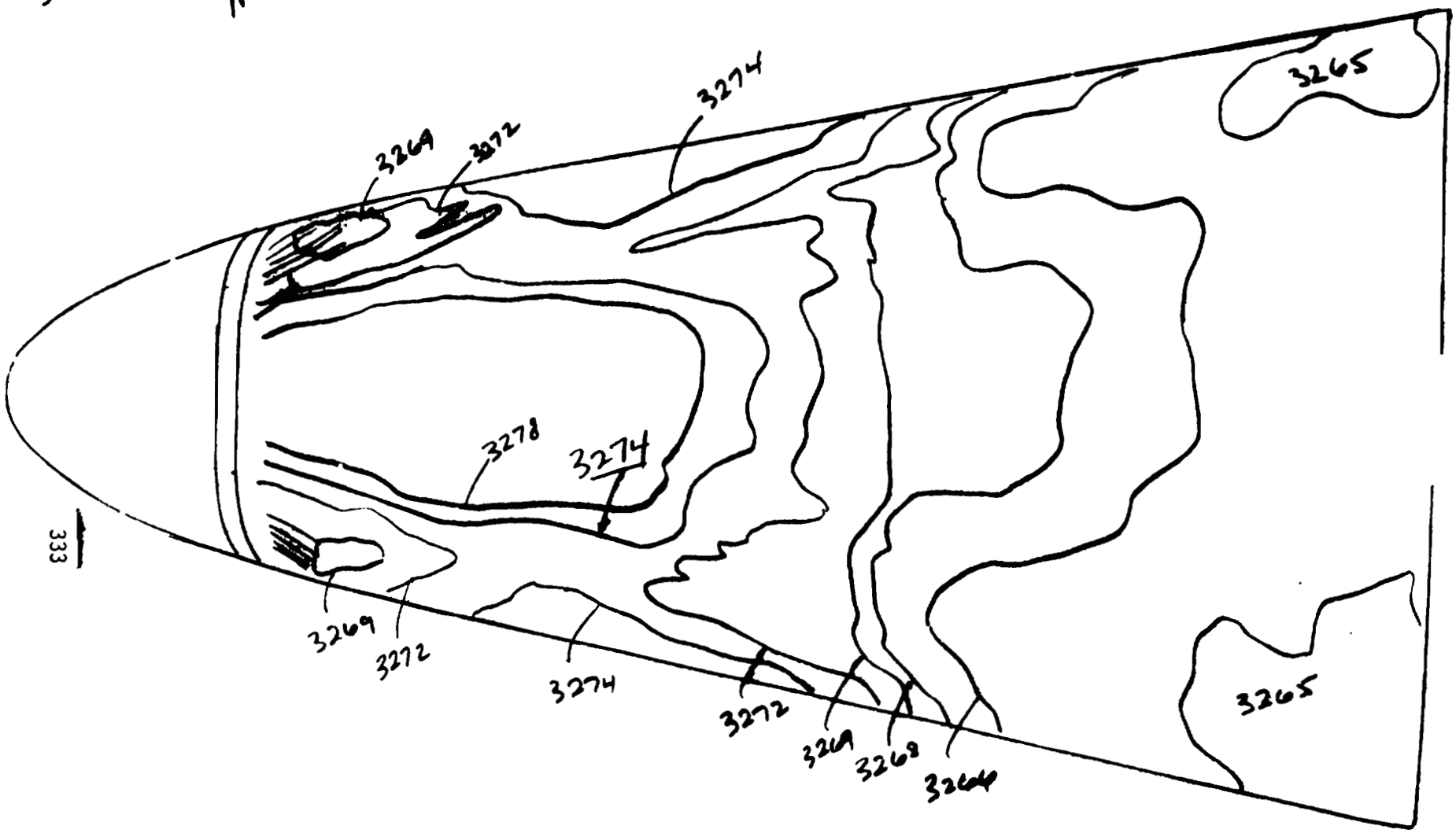

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
01	11	TRIP				S	.110	.039	4.865E 05	3.302E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.94	210.5	1272	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .040 FT)	STREF (IN= .040 FT)
93.5	.023	.096	3761	2.032E-05	7.524E-08	1.016E 06	1.617E-02	2.669E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RNDXCXR)	TRAR(TO)	BETA(TO)
IOF(T)	406					
>ICF(S)	393	175	80	.0573	1.298E-01	1.2837E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3260(175)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	4925(175)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3261(175)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	4926(175)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
I	3262(175)	2.63	1.71	5.617E-03	.3473	6.970E-03	.4309	6.767E-03	.4184	9.165E-03
>	4927(175)	2.63	1.71	5.617E-03	.3473	6.970E-03	.4309	6.767E-03	.4184	9.165E-03
I	3263(175)	3.70	2.79	4.403E-03	.2722	5.463E-03	.3377	5.304E-03	.3279	7.183E-03
>	4922(175)	3.70	2.79	4.403E-03	.2722	5.463E-03	.3377	5.304E-03	.3279	7.183E-03
>6		3.95								
I	3264(175)	4.78	3.87	3.741E-03	.2313	4.641E-03	.2869	4.506E-03	.2786	6.102E-03
>	4929(175)	4.78	3.87	3.741E-03	.2313	4.641E-03	.2869	4.506E-03	.2786	6.102E-03
I	3265(175)	5.86	4.94	3.308E-03	.2045	4.105E-03	.2538	3.985E-03	.2464	5.397E-03
>	4930(175)	5.86	4.94	3.308E-03	.2045	4.105E-03	.2538	3.985E-03	.2464	5.397E-03
I	3266(175)	6.93	6.02	2.998E-03	.1854	3.720E-03	.2300	3.611E-03	.2233	4.891E-03
>	4931(175)	6.93	6.02	2.998E-03	.1854	3.720E-03	.2300	3.611E-03	.2233	4.891E-03
>	4932(175)	8.01	7.10	2.761E-03	.1707	3.426E-03	.2118	3.326E-03	.2057	4.505E-03
I	3267(175)	8.03	7.12	2.757E-03	.1704	3.420E-03	.2114	3.321E-03	.2053	4.497E-03
I	3268(175)	9.11	8.20	2.569E-03	.1588	3.188E-03	.1971	3.095E-03	.1913	4.192E-03
>	4933(175)	9.11	8.20	2.569E-03	.1588	3.188E-03	.1971	3.095E-03	.1913	4.192E-03
I	3269(175)	10.19	9.27	2.416E-03	.1493	2.997E-03	.1853	2.910E-03	.1799	3.941E-03
>	4934(175)	10.19	9.27	2.416E-03	.1493	2.997E-03	.1853	2.910E-03	.1799	3.941E-03
>	4935(175)	11.24	10.32	2.289E-03	.1415	2.840E-03	.1756	2.758E-03	.1705	3.735E-03
I	3270(175)	11.26	10.35	2.286E-03	.1414	2.837E-03	.1754	2.754E-03	.1703	3.730E-03
I	3271(175)	12.34	11.43	2.176E-03	.1345	2.700E-03	.1669	2.621E-03	.1621	3.550E-03
>	4936(175)	12.34	11.43	2.176E-03	.1345	2.700E-03	.1669	2.621E-03	.1621	3.550E-03

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V41R-82A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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WRCUF CINF16 *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REA	RED
01	11	TRIP				S	.110	.039	4.805E 05	3.302E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREBEND	ROLL-MODEL	TAN
7.94	210.5	1272	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .060 FT)	STREF (R= .060 FT)
93.5	.023	.999	3761	7.832E-05	7.524E-08	1.016E 06	1.417E-02	2.669E-02

CAMERA	HULL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TBAR(TO)	BETA(TO)
1OP(T)	406					
>ICE(S)	393	175	80	.6573	1.298E-01	1.2837E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3272(175)	13.42	12.50	2.080E-03	.1286	2.581E-03	.1596	2.506E-03	.1549	3.394E-03
>	4937(175)	13.42	12.50	2.080E-03	.1286	2.581E-03	.1596	2.506E-03	.1549	3.394E-03
I	3273(175)	14.52	13.60	1.944E-03	.1233	2.474E-03	.1570	2.402E-03	.1485	3.254E-03
>	4938(175)	14.52	13.60	1.944E-03	.1233	2.474E-03	.1570	2.402E-03	.1485	3.254E-03
I	3274(175)	15.59	14.68	1.920E-03	.1187	2.382E-03	.1473	2.313E-03	.1430	3.132E-03
>	4939(175)	15.59	14.68	1.920E-03	.1187	2.382E-03	.1473	2.313E-03	.1430	3.132E-03
I	3275(175)	16.67	15.76	1.853E-03	.1146	2.299E-03	.1421	2.232E-03	.1380	3.023E-03
>	4940(175)	16.67	15.76	1.853E-03	.1146	2.299E-03	.1421	2.232E-03	.1380	3.023E-03
I	3276(175)	17.75	16.83	1.793E-03	.1108	2.224E-03	.1375	2.160E-03	.1335	2.925E-03
>	4941(175)	17.75	16.83	1.793E-03	.1109	2.224E-03	.1375	2.160E-03	.1335	2.925E-03
I	3277(175)	18.82	17.91	1.738E-03	.1075	2.157E-03	.1333	2.094E-03	.1295	2.836E-03
>	4942(175)	18.82	17.91	1.738E-03	.1075	2.157E-03	.1333	2.094E-03	.1295	2.836E-03
I	3278(175)	19.92	19.01	1.687E-03	.1043	2.093E-03	.1294	2.032E-03	.1256	2.752E-03
>	4943(175)	19.92	19.01	1.687E-03	.1043	2.093E-03	.1294	2.032E-03	.1256	2.752E-03
I	3279(175)	21.00	20.09	1.641E-03	.1015	2.036E-03	.1259	1.977E-03	.1222	2.678E-03
>	4944(175)	21.00	20.09	1.641E-03	.1015	2.036E-03	.1259	1.977E-03	.1222	2.678E-03
		21.30		MODEL HAS LEFT CENTERLINE						
I	3280(175)	22.08	21.16	1.599E-03	.0989	1.984E-03	.1227	1.926E-03	.1191	2.609E-03
>	4945(175)	22.08	21.16	1.599E-03	.0989	1.984E-03	.1227	1.926E-03	.1191	2.609E-03
I	3281(175)	23.15	22.24	1.560E-03	.0964	1.935E-03	.1197	1.879E-03	.1162	2.545E-03
>	4946(175)	23.15	22.24	1.560E-03	.0964	1.935E-03	.1197	1.879E-03	.1162	2.545E-03

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TPC 250

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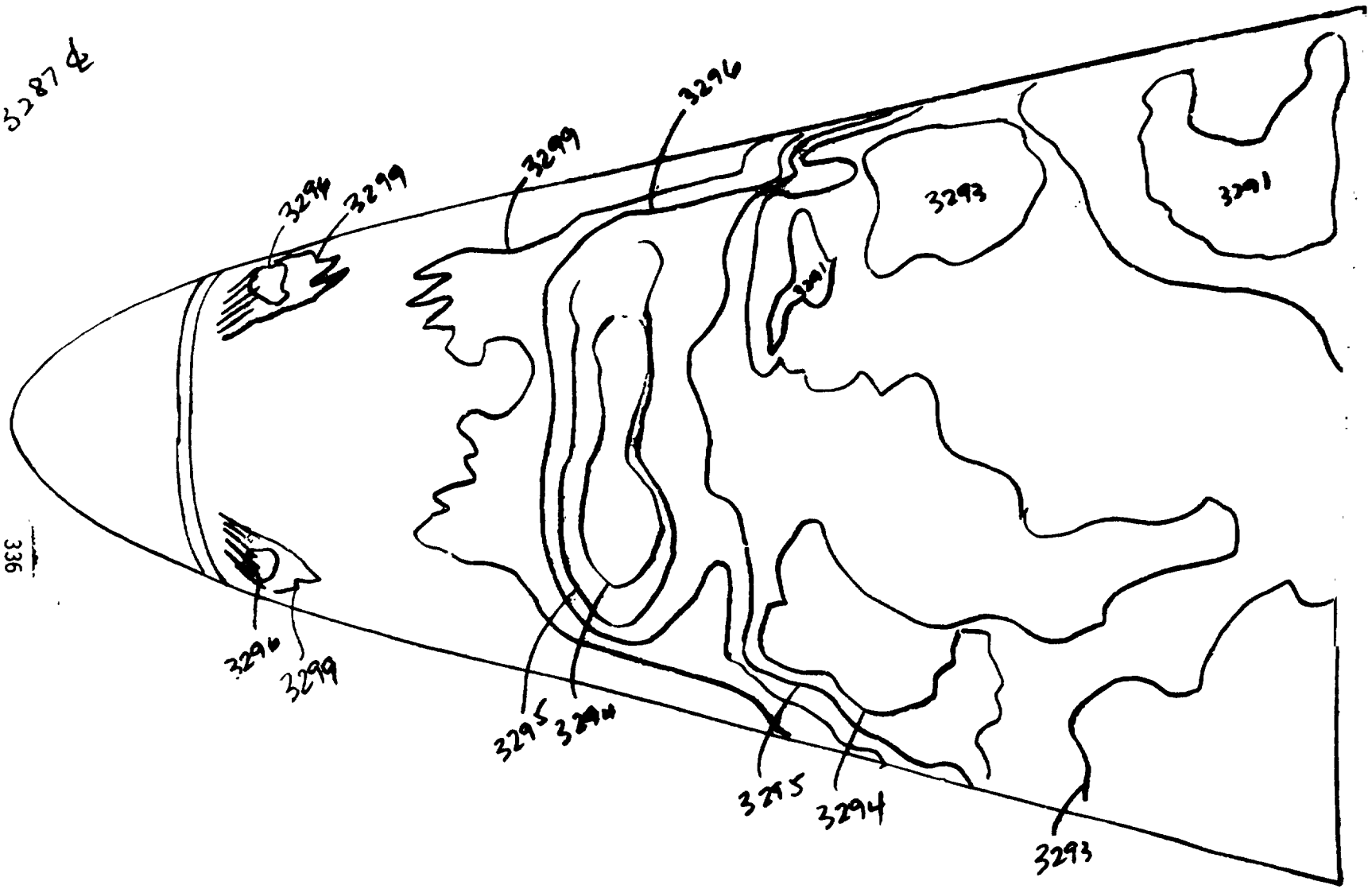

GROUP CONFIG *** MODEL DESCRIPTION ***

GROUP	CONFIG	MODEL DESCRIPTION
82	11	TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	RED
			S	.110	.039	4.046E 05	3.329E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREREND	ROLL-MODEL	YAW
7.94	211.7	1270	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF	STREF
93.3	.023	1.805	3758	2.042E-05	7.511E-08	1.024E 06	1.622E-02 (R= .040 FT)	2.658E-02 (W= .040 FT)

LAPFRA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TRAR(TO)	BETA(TO)
(OF(T)	406					
>ICE(S)	393	258	94	.0617	2.288E-01	2.4888E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3283(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	4548(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3286(250)	1.58		MODEL HAS NOT REACHED CENTERLINE						
>	4949(250)	1.58		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	3285(250)	2.63	1.78	1.178E-02	.7262	1.503E-02	.9267	1.373E-02	.8469	1.901E-02
>	4550(250)	2.63	1.78	1.178E-02	.7262	1.503E-02	.9267	1.373E-02	.8469	1.901E-02
I	3286(250)	3.70	2.78	9.215E-03	.5683	1.176E-02	.7252	1.075E-02	.6628	1.488E-02
>	4551(250)	3.70	2.78	9.215E-03	.5683	1.176E-02	.7252	1.075E-02	.6628	1.488E-02
>6		3.95								
I	3287(250)	4.78	3.86	7.823E-03	.4824	9.983E-03	.6156	9.123E-03	.5626	1.263E-02
>	4552(250)	4.78	3.86	7.823E-03	.4824	9.983E-03	.6156	9.123E-03	.5626	1.263E-02
I	3288(250)	5.88	4.96	6.899E-03	.4255	8.804E-03	.5429	8.046E-03	.4962	1.114E-02
>	4553(250)	5.88	4.96	6.899E-03	.4255	8.804E-03	.5429	8.046E-03	.4962	1.114E-02
I	3289(250)	6.96	6.03	6.253E-03	.3856	7.980E-03	.4921	7.293E-03	.4497	1.009E-02
>	4554(250)	6.96	6.03	6.253E-03	.3856	7.980E-03	.4921	7.293E-03	.4497	1.009E-02
I	3290(250)	8.03	7.11	5.760E-03	.3552	7.351E-03	.4533	6.718E-03	.4143	9.299E-03
>	4555(250)	8.03	7.11	5.760E-03	.3552	7.351E-03	.4533	6.718E-03	.4143	9.299E-03
I	3291(250)	9.11	8.18	5.368E-03	.3310	6.850E-03	.4225	6.260E-03	.3861	8.666E-03
>	4556(250)	9.11	8.18	5.368E-03	.3310	6.850E-03	.4225	6.260E-03	.3861	8.666E-03
I	3292(250)	10.19	9.26	5.046E-03	.3112	6.440E-03	.3971	5.885E-03	.3629	8.147E-03
>	4557(250)	10.19	9.26	5.046E-03	.3112	6.440E-03	.3971	5.885E-03	.3629	8.147E-03
I	3293(250)	11.29	10.36	4.771E-03	.2942	6.088E-03	.3754	5.564E-03	.3431	7.702E-03
>	4558(250)	11.29	10.36	4.771E-03	.2942	6.088E-03	.3754	5.564E-03	.3431	7.702E-03
I	3294(250)	12.36	11.44	4.541E-03	.2800	5.794E-03	.3573	5.295E-03	.3266	7.330E-03
>	4559(250)	12.36	11.44	4.541E-03	.2800	5.794E-03	.3573	5.295E-03	.3266	7.330E-03

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V41A-028

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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GROUP CONFIG *** MODEL DESCRIPTION ***

82 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	INJP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
			S	.110	.039	4.868E 05	3.329E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.94	211.7	1270	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
93.3	.023	1.095	3758	2.048E-05	7.511E-08	1.024E 06	1.622E-02	2.658E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAK)	TBAR(TO)	BETA(TO)
10F(T)	406					
5ICE(S)	303	250	84	.0617	2.288E-01	2.4888E-01
56						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/HREF	M(.9TO)	M(.9TO)/HREF	M(.934TO)	M(.934TO)/HREF	ST(TO)
I	3295(250)	13.44	12.51	4.301E-03	.2677	5.540E-03	.3416	5.063E-03	.3122	7.088E-03
S	4960(250)	13.44	12.51	4.301E-03	.2677	5.540E-03	.3416	5.063E-03	.3122	7.088E-03
I	3296(250)	14.54	13.61	4.102E-03	.2567	5.311E-03	.3275	4.854E-03	.2993	6.719E-03
S	4961(250)	14.54	13.61	4.102E-03	.2567	5.311E-03	.3275	4.854E-03	.2993	6.719E-03
I	3297(250)	15.59	14.67	4.010E-03	.2473	5.1[illegible]E-03	.3156	4.676E-03	.2884	6.473E-03
S	4962(250)	15.59	14.67	4.010E-03	.2473	5.1[illegible]E-03	.3156	4.676E-03	.2884	6.473E-03
I	3298(250)	16.69	15.77	3.847E-03	.2385	4.935E-03	.3043	4.510E-03	.2781	6.243E-03
S	4963(250)	16.69	15.77	3.847E-03	.2385	4.935E-03	.3043	4.510E-03	.2781	6.243E-03
I	3299(250)	17.77	16.84	3.742E-03	.2307	4.775E-03	.2945	4.364E-03	.2691	6.040E-03
S	4964(250)	17.77	16.84	3.742E-03	.2307	4.775E-03	.2945	4.364E-03	.2691	6.040E-03
I	3300(250)	18.85	17.92	3.628E-03	.2237	4.629E-03	.2855	4.231E-03	.2609	5.856E-03
S	4965(250)	18.85	17.92	3.628E-03	.2237	4.629E-03	.2855	4.231E-03	.2609	5.856E-03
		19.65		MODEL HAS LEFT CENTERLINE						
I	3301(250)	19.65	19.02	3.521E-03	.2171	4.493E-03	.2771	4.106E-03	.2532	5.684E-03
S	4966(250)	19.65	19.02	3.521E-03	.2171	4.493E-03	.2771	4.106E-03	.2532	5.684E-03
I	3302(250)	21.02	20.10	3.425E-03	.2112	4.371E-03	.2696	3.995E-03	.2464	5.530E-03
S	4967(250)	21.02	20.10	3.425E-03	.2112	4.371E-03	.2696	3.995E-03	.2464	5.530E-03
I	3303(250)	22.10	21.17	3.337E-03	.2058	4.259E-03	.2626	3.892E-03	.2400	5.387E-03
S	4968(250)	22.10	21.17	3.337E-03	.2058	4.259E-03	.2626	3.892E-03	.2400	5.387E-03

406

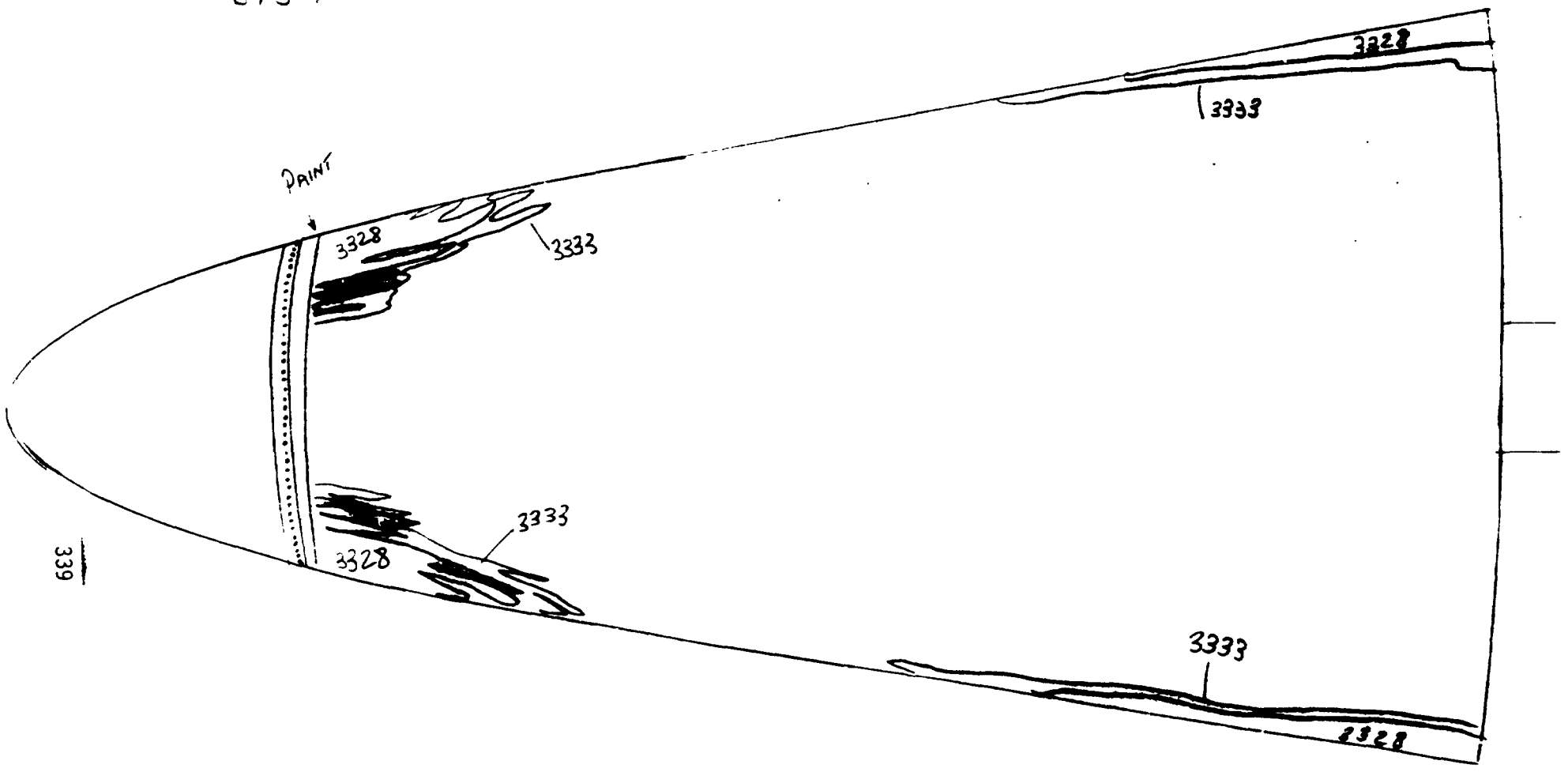
GP83 T_{PC} = 175°F

210 PSIA

815°F

$\alpha = 20°$

3310 ℄



Re COW MELT VERY SLOW

NASA-HI OH 54 AEDC(ARO.INC.) ARNOLD AFS.TENNESSEE 10- 8-74 PAGE 1

V41A-824 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP CONFIG *** MODEL DESCRIPTION ***

03 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
			S	.110	.039	4.818E 05	3.311E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.94	210.9	1271	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .040 FT)	STREF (IN= .040 FT)
9[illegible].4	.023	1.201	3760	2.037E-05	7.520E-08	1.019E 06	1.619E-02	2.665E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRAN(TO)	BETA(TO)
IOF(T)	406					
SICE(S)	393	175	81	.0573	1.287E-01	1.271E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3307(175)	.78		MODEL HAS NOT REACHED CENTERLINE						
>	4548(175)	.78		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	3308(175)	1.78	.86	7.841E-03	.4844	9.732E-03	.6012	9.919E-03	.6127	1.276E-02
>	4549(175)	1.78	.86	7.841E-03	.4844	9.732E-03	.6012	9.919E-03	.6127	1.276E-02
I	3309(175)	2.63	1.91	5.206E-03	.3253	6.536E-03	.4037	6.661E-03	.4115	8.573E-03
>	4550(175)	2.63	1.91	5.206E-03	.3253	6.536E-03	.4037	6.661E-03	.4115	8.573E-03
I	3310(175)	3.60	2.99	4.213E-03	.2603	5.229E-03	.3230	5.330E-03	.3292	6.859E-03
>	4551(175)	3.60	2.99	4.213E-03	.2603	5.229E-03	.3230	5.330E-03	.3292	6.859E-03
>6			3.98							
I	3311(175)	4.68	4.07	3.613E-03	.2232	4.485E-03	.2770	4.571E-03	.2823	5.882E-03
>	4552(175)	5.61	4.09	3.602E-03	.2225	4.471E-03	.2762	4.557E-03	.2815	5.864E-03
I	3312(175)	6.08	5.17	3.205E-03	.1980	3.978E-03	.2457	4.055E-03	.2505	5.218E-03
>	4553(175)	6.08	5.17	3.205E-03	.1980	3.978E-03	.2457	4.055E-03	.2505	5.218E-03
I	3313(175)	7.16	6.24	2.916E-03	.1801	3.619E-03	.2236	3.689E-03	.2279	4.747E-03
>	4554(175)	7.16	6.24	2.916E-03	.1801	3.619E-03	.2236	3.689E-03	.2279	4.747E-03
I	3314(175)	8.21	7.30	2.688E-03	.1666	3.348E-03	.2068	3.413E-03	.2108	4.392E-03
>	4555(175)	8.21	7.30	2.688E-03	.1666	3.348E-03	.2068	3.413E-03	.2108	4.392E-03
I	3315(175)	9.29	8.37	2.518E-03	.1556	3.126E-03	.1931	3.186E-03	.1968	4.100E-03
>	4556(175)	9.29	8.37	2.518E-03	.1556	3.126E-03	.1931	3.186E-03	.1968	4.100E-03
I	3316(175)	10.36	9.45	2.371E-03	.1464	2.942E-03	.1818	2.994E-03	.1853	3.859E-03
>	4557(175)	10.39	9.47	2.367E-03	.1462	2.938E-03	.1815	2.995E-03	.1850	3.854E-03
I	3317(175)	11.46	10.55	2.243E-03	.1386	2.785E-03	.1720	2.838E-03	.1753	3.652E-03
>	4558(175)	11.46	10.55	2.243E-03	.1384	2.785E-03	.1720	2.838E-03	.1753	3.652E-03
I	3318(175)	12.54	11.63	2.137E-03	.1320	2.653E-03	.1639	2.704E-03	.1670	3.479E-03
>	4559(175)	12.54	11.63	2.137E-03	.1320	2.653E-03	.1639	2.704E-03	.1670	3.479E-03

UNCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	AEB
83	11	TRIP				S	.110	.039	4.010E 05	3.311E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.94	218.9	1271	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STHEF (R= .040 FT)
93.4	.073	1.001	3700	2.037E-05	7.520E-08	1.019E 06	1.619E-02	2.665E-02

CAPERA (DEG T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TRAR(TO)	BETA(TO)
	404					
>ILE(S)	393	175	RI	.0573	1.287E-01	1.2717E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3319(175)	13.64	12.73	2.043E-03	.1262	2.535E-03	.1566	2.584E-03	.1596	3.325E-03
>	4560(175)	13.64	12.73	2.043E-03	.1262	2.535E-03	.1566	2.584E-03	.1596	3.325E-03
I	3320(175)	14.72	13.80	1.961E-03	.1212	2.434E-03	.1504	2.481E-03	.1533	3.193E-03
>	4561(175)	14.72	13.80	1.961E-03	.1212	2.434E-03	.1504	2.481E-03	.1533	3.193E-03
I	3321(175)	15.79	14.88	1.889E-03	.1167	2.345E-03	.1448	2.390E-03	.1476	3.075E-03
>	4562(175)	15.79	14.88	1.889E-03	.1167	2.345E-03	.1448	2.390E-03	.1476	3.075E-03
I	3322(175)	16.84	15.93	1.826E-03	.1128	2.266E-03	.1400	2.310E-03	.1427	2.972E-03
>	4563(175)	16.84	15.93	1.826E-03	.1128	2.266E-03	.1400	2.310E-03	.1427	2.972E-03
I	3323(175)	17.95	17.03	1.766E-03	.1091	2.192E-03	.1354	2.234E-03	.1380	2.874E-03
>	4564(175)	17.95	17.03	1.766E-03	.1091	2.192E-03	.1354	2.234E-03	.1380	2.874E-03
I	3324(175)	19.02	18.11	1.712E-03	.1058	2.125E-03	.1313	2.166E-03	.1338	2.788E-03
>	4565(175)	19.02	18.11	1.712E-03	.1058	2.125E-03	.1313	2.166E-03	.1338	2.788E-03
I	3325(175)	20.12	19.21	1.663E-03	.1027	2.064E-03	.1275	2.103E-03	.1299	2.707E-03
>	4566(175)	20.12	19.21	1.663E-03	.1027	2.064E-03	.1275	2.103E-03	.1299	2.707E-03
I	3326(175)	21.20	20.29	1.618E-03	.0999	2.008E-03	.1240	2.047E-03	.1264	2.634E-03
>	4567(175)	21.20	20.29	1.618E-03	.0999	2.008E-03	.1240	2.047E-03	.1264	2.634E-03
I	3327(175)	22.28	21.36	1.577E-03	.0974	1.957E-03	.1209	1.994E-03	.1232	2.567E-03
>	4568(175)	22.28	21.36	1.577E-03	.0974	1.957E-03	.1209	1.994E-03	.1232	2.567E-03
I	3328(175)	23.35	22.44	1.538E-03	.0950	1.909E-03	.1179	1.946E-03	.1202	2.504E-03
>	4569(175)	23.35	22.44	1.538E-03	.0950	1.909E-03	.1179	1.946E-03	.1202	2.504E-03
I	3329(175)	24.45	23.54	1.502E-03	.0928	1.864E-03	.1152	1.900E-03	.1174	2.445E-03
>	4570(175)	24.45	23.54	1.502E-03	.0928	1.864E-03	.1152	1.900E-03	.1174	2.445E-03
I	3330(175)	25.50	24.59	1.469E-03	.0908	1.824E-03	.1127	1.859E-03	.1148	2.392E-03
>	4571(175)	25.50	24.59	1.469E-03	.0908	1.824E-03	.1127	1.859E-03	.1148	2.392E-03
I	3331(175)	26.61	25.69	1.438E-03	.0888	1.784E-03	.1102	1.819E-03	.1123	2.340E-03
>	4572(175)	26.61	25.69	1.438E-03	.0888	1.784E-03	.1102	1.819E-03	.1123	2.340E-03

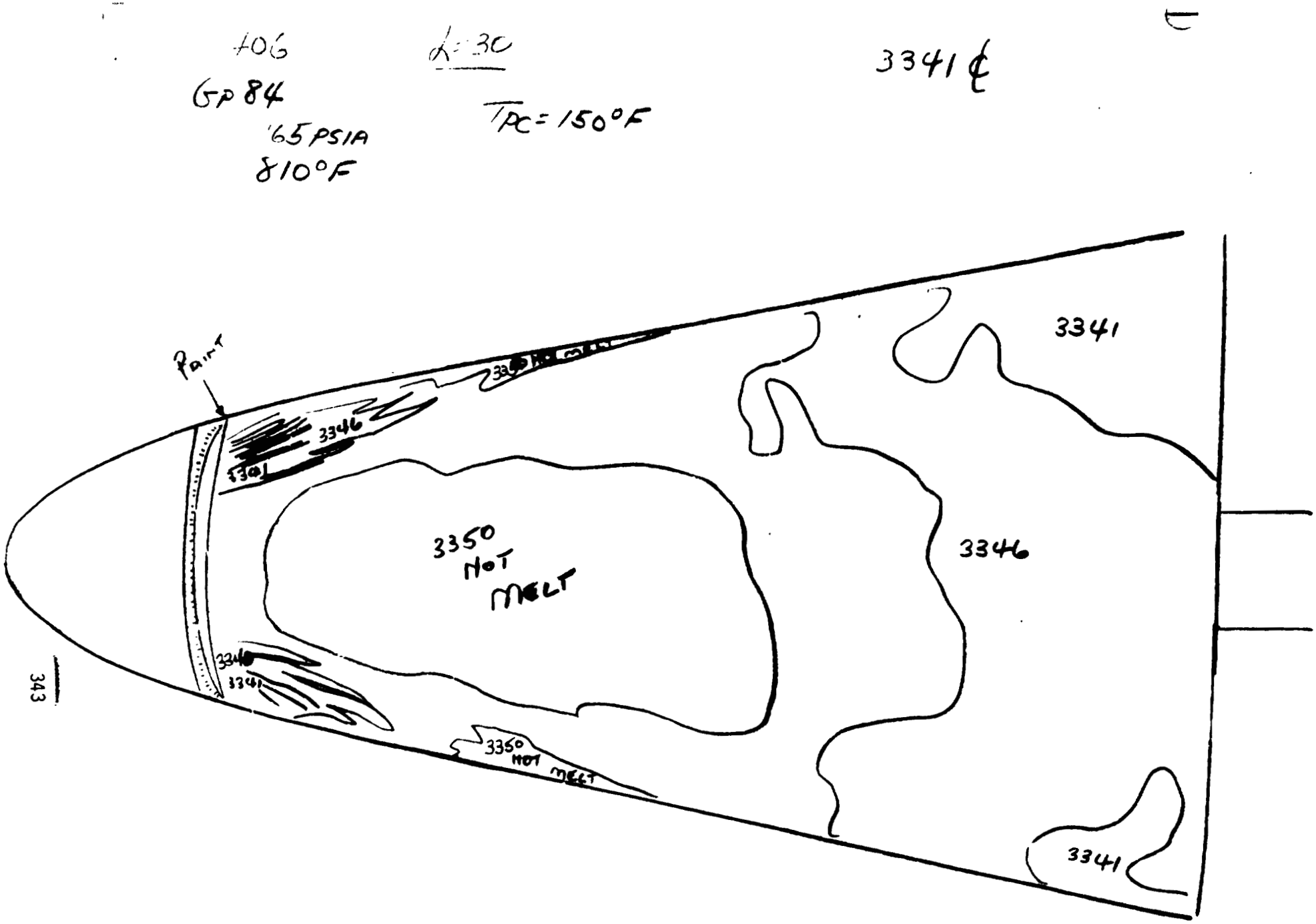
GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	REO
83	11	TRIP				S	.110	.037	4.818E 05	3.311E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.94	210.9	1271	19.98	10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.4	.023	1.001	3760	2.037E-05	7.520E-08	1.019E 06	1.619E-02	2.665E-02

LAPEGA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAK)	TRAN(TO)	BETA(TO)
IOF(T)	406					
SICE(S)	393	175	81	.0573	1.287E-01	1.2717E-01
S6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3332(175)	27.88	28.77	1.408E-03	.0870	1.748E-03	.1080	1.782E-03	.1101	2.293E-03
S	4973(175)	27.88	28.77	1.408E-03	.0870	1.748E-03	.1080	1.782E-03	.1101	2.293E-03
I	3333(175)	28.76	27.86	1.381E-03	.0853	1.714E-03	.1059	1.747E-03	.1079	2.248E-03
S	4974(175)	28.76	27.86	1.381E-03	.0853	1.714E-03	.1059	1.747E-03	.1079	2.248E-03
		29.08		MODEL HAS LEFT CENTERLINE						
I	3334(175)	29.86	28.95	1.354E-03	.0837	1.681E-03	.1038	1.713E-03	.1058	2.205E-03
S	4975(175)	29.86	28.95	1.354E-03	.0837	1.681E-03	.1038	1.713E-03	.1058	2.205E-03
I	3335(175)	30.94	30.07	1.330E-03	.0822	1.651E-03	.1020	1.682E-03	.1039	2.165E-03
S	4976(175)	30.94	30.07	1.330E-03	.0822	1.651E-03	.1020	1.682E-03	.1039	2.165E-03
I	3336(175)	32.01	31.19	1.307E-03	.0807	1.622E-03	.1002	1.653E-03	.1021	2.127E-03
S	4977(175)	32.01	31.19	1.307E-03	.0807	1.622E-03	.1002	1.653E-03	.1021	2.127E-03


406
GP 84
65 PSIA
810°F
α = 30
TPC = 150°F
3341 ℄
Paint
3346
3350
3350
NOT
MELT
3346
3341
3350
NOT
MELT
3341

WRCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REB	HEB
06	11	TRIP				5	.110	.039	3.069E 05	2.045E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.93	169.9	1261	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .040 FT)	STREF (IN= .040 FT)
92.9	.018	.792	3765	1.625E-05	7.679E-06	8.137E 05	1.438E-02	2.982E-02

CAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACRA)	TRAN(TO)	BETA(TO)
IOP(T)	406					
SICE(S)	393	150	83	.0558	9.328E-02	8.929E-02
>0						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
	333P(150)	.50		MODEL HAS NOT REACHED CENTERLINE						
>	5003(150)	.53		MODEL HAS NOT REACHED CENTERLINE						
	333Y(150)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	5004(150)	1.68		MODEL HAS NOT REACHED CENTERLINE						
IN-ECT TIME =			1.65							
	334C(150)	2.65	1.73	3.743E-03	.2637	4.680E-03	.3256	4.564E-03	.3163	7.706E-03
>	5005(150)	2.65	1.73	3.743E-03	.2637	4.680E-03	.3256	4.564E-03	.3163	7.706E-03
	334I(150)	3.73	2.80	2.977E-03	.2070	3.673E-03	.2554	3.570E-03	.2482	6.111E-03
>	5006(150)	3.73	2.80	2.977E-03	.2070	3.673E-03	.2554	3.570E-03	.2482	6.111E-03
>6			3.95							
	334Z(150)	4.81	3.88	2.530E-03	.1759	3.122E-03	.2171	3.034E-03	.2110	5.194E-03
>	5007(150)	4.81	3.88	2.530E-03	.1759	3.122E-03	.2171	3.034E-03	.2110	5.194E-03
	3343(150)	5.91	4.98	2.233E-03	.1553	2.755E-03	.1916	2.678E-03	.1862	4.584E-03
>	5008(150)	5.91	4.98	2.233E-03	.1553	2.755E-03	.1916	2.678E-03	.1862	4.584E-03
	3344(150)	6.98	6.04	2.025E-03	.1408	2.498E-03	.1737	2.428E-03	.1688	4.157E-03
>	5009(150)	6.98	6.04	2.025E-03	.1408	2.498E-03	.1737	2.428E-03	.1688	4.157E-03
	3345(150)	8.08	7.14	1.862E-03	.1295	2.298E-03	.1598	2.234E-03	.1553	3.823E-03
>	5010(150)	8.08	7.14	1.862E-03	.1295	2.298E-03	.1598	2.234E-03	.1553	3.823E-03
	3346(150)	9.16	8.23	1.736E-03	.1207	2.143E-03	.1490	2.083E-03	.1448	3.565E-03
>	5011(150)	9.16	8.23	1.736E-03	.1207	2.143E-03	.1490	2.083E-03	.1448	3.565E-03
	3347(150)	10.21	9.28	1.635E-03	.1137	2.018E-03	.1403	1.961E-03	.1364	3.357E-03
>	5012(150)	10.21	9.28	1.635E-03	.1137	2.018E-03	.1403	1.961E-03	.1364	3.357E-03
>	5013(150)	11.29	10.36	1.548E-03	.1076	1.910E-03	.1328	1.856E-03	.1291	3.178E-03
	334H(150)	11.31	10.39	1.546E-03	.1075	1.908E-03	.1327	1.854E-03	.1289	3.174E-03
	3349(150)	12.36	11.44	1.473E-03	.1024	1.818E-03	.1264	1.767E-03	.1229	3.025E-03
>	5014(150)	12.36	11.44	1.473E-03	.1024	1.818E-03	.1264	1.767E-03	.1229	3.025E-03

V418-A2A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
06	11	TRIP				S	.110	.039	3.049E 05	2.049E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.93	165.9	1261	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (H= .040 FT)
92.9	.018	.792	3765	1.425E-05	7.479E-08	8.137E 05	1.438E-02	2.982E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HNCACAK)	TRAN(TO)	BETA(TO)
>ICE(S)	400					
>6	393	150	83	.0599	9.328E-02	8.929E-02

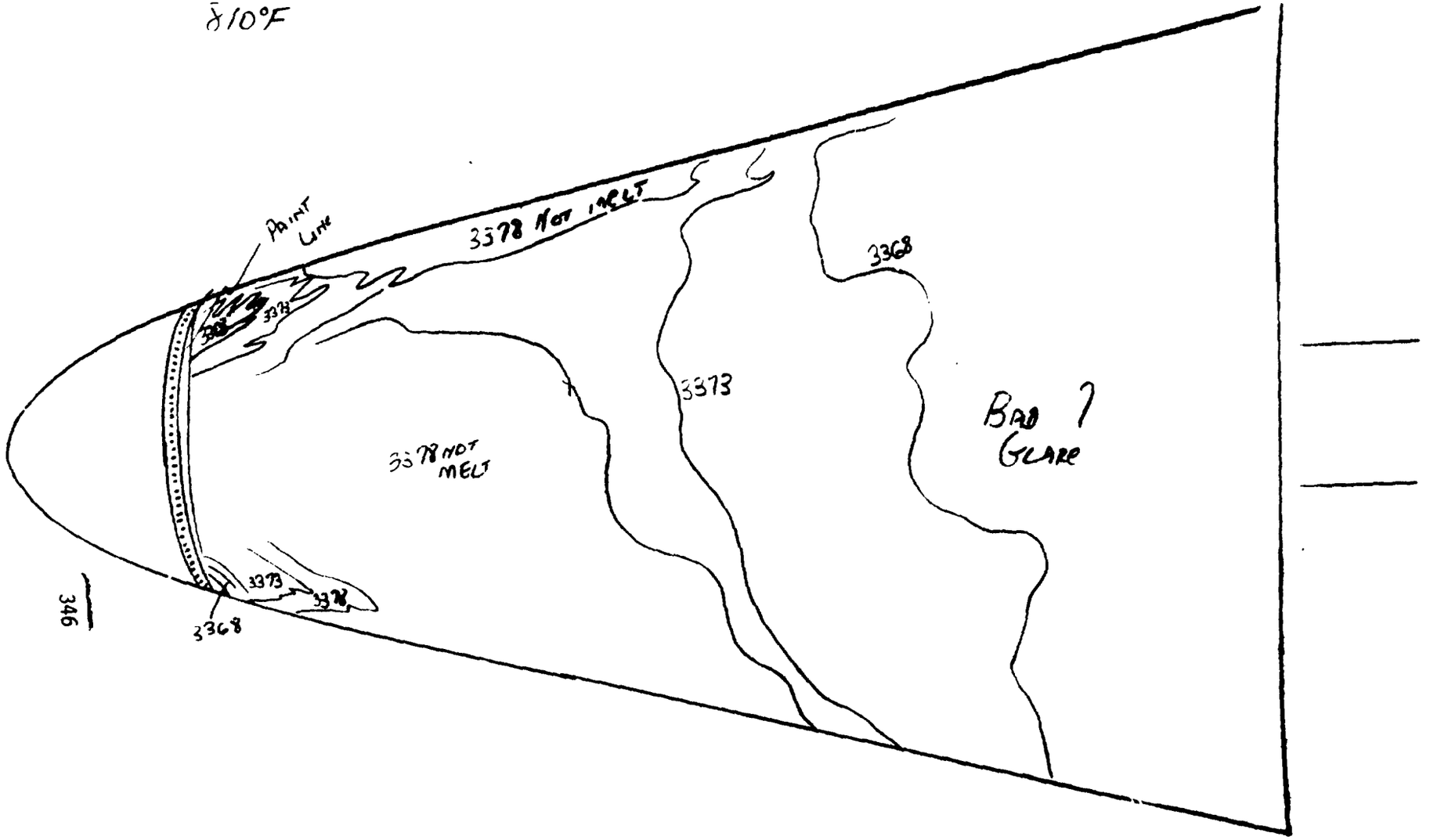
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3350(150)	13.47	12.56	1.407E-03	.0978	1.734E-03	.1207	1.608E-03	.1173	2.089E-03
>	5015(150)	13.47	12.56	1.407E-03	.0978	1.736E-03	.1207	1.608E-03	.1173	2.089E-03
		13.57		MODEL HAS LEFT CENTERLINE						
I	3351(150)	14.54	13.61	1.350E-03	.0939	1.666E-03	.1159	1.619E-03	.1126	2.772E-03
>	5016(150)	14.54	13.61	1.350E-03	.0939	1.666E-03	.1159	1.619E-03	.1126	2.772E-03
I	3352(150)	15.62	14.69	1.300E-03	.0904	1.604E-03	.1115	1.559E-03	.1084	2.669E-03
>	5017(150)	15.62	14.69	1.300E-03	.0904	1.604E-03	.1115	1.559E-03	.1084	2.669E-03

406
GP85
165 PSIA
810°F

$T_{PC} = 250°F$

$\alpha = 40°$

3357 ℄



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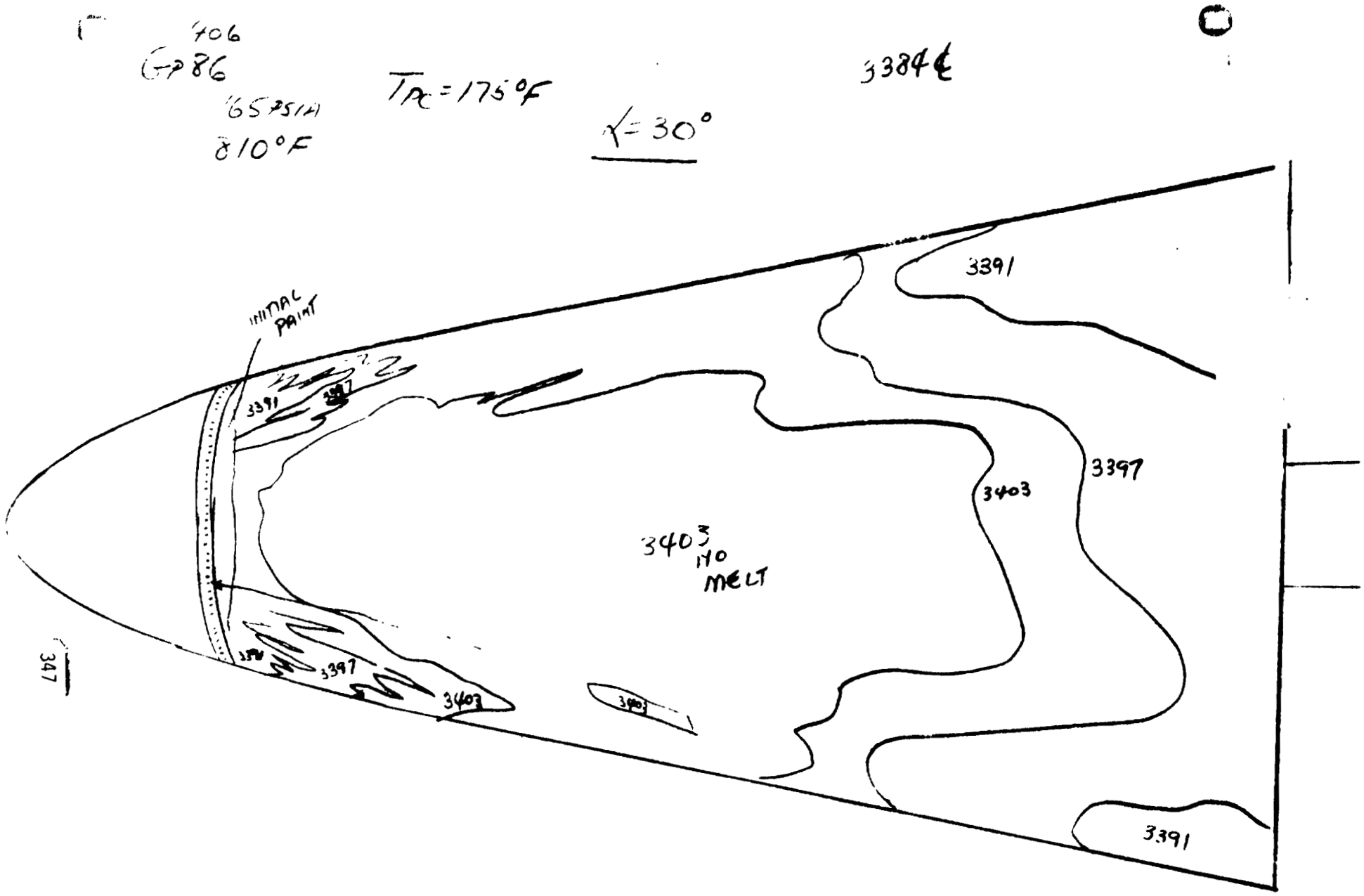
406
GP86
65 PSIA
810°F
T_R = 175°F
3384¢
γ = 30°
INITIAL PAINT
3391
3397
3403
3403
NO MELT
3397
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3403
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3391

NASA-HI OH 94

V419-A24

AEDC(ARO.INC.) ARNOLD AFS.TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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WRCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REB	RED
85	11	TRIP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
						S	.110	.039	3.810E 05	2.619E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.93	166.1	1271	39.96	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	STREF
93.6	.018	.793	3759	1.415E-05	7.536E-08	8.056E 05	(H= .040 FT) 1.441E-02	(H= .040 FT) 2.993E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHOACAR)	TRAR(TO)	RETA(TO)
IOF(T)	406					
SICE(S)	393	250	81	.0617	2.316E-01	2.5260E-01
S6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3354(250)	.49		MODEL HAS NOT REACHED CENTERLINE						
S	5019(250)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3355(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	5020(250)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.69								
I	3356(250)	2.63	1.71	1.190E-02	.8260	1.518E-02	1.0536	1.388E-02	.9634	2.435E-02
S	5021(250)	2.63	1.71	1.190E-02	.8260	1.518E-02	1.0536	1.388E-02	.9634	2.435E-02
I	3357(250)	3.68	2.77	9.371E-03	.6504	1.195E-02	.8295	1.093E-02	.7585	1.917E-02
S	5022(250)	3.68	2.77	9.371E-03	.6504	1.195E-02	.8295	1.093E-02	.7585	1.917E-02
S6		3.90								
I	3358(250)	4.76	3.84	7.951E-03	.5518	1.014E-02	.7038	9.273E-03	.6436	1.627E-02
S	5023(250)	4.76	3.84	7.951E-03	.5518	1.014E-02	.7038	9.273E-03	.6436	1.627E-02
I	3359(250)	4.86	4.94	7.010E-03	.4865	8.941E-03	.6205	8.175E-03	.5674	1.434E-02
S	5024(250)	5.86	4.94	7.010E-03	.4865	8.941E-03	.6205	8.175E-03	.5674	1.434E-02
I	3360(250)	6.53	6.02	6.352E-03	.4409	8.102E-03	.5623	7.409E-03	.5142	1.300E-02
S	5025(250)	6.53	6.02	6.352E-03	.4409	8.102E-03	.5623	7.409E-03	.5142	1.300E-02
I	3361(250)	8.01	7.19	5.851E-03	.4061	7.462E-03	.5179	6.824E-03	.4736	1.197E-02
S	5026(250)	8.01	7.19	5.851E-03	.4061	7.462E-03	.5179	6.824E-03	.4736	1.197E-02
I	3362(250)	9.09	8.17	5.452E-03	.3784	6.954E-03	.4826	6.358E-03	.4413	1.115E-02
S	5027(250)	9.09	8.17	5.452E-03	.3784	6.954E-03	.4826	6.358E-03	.4413	1.115E-02
I	3363(250)	10.16	9.25	5.125E-03	.3557	6.537E-03	.4536	5.977E-03	.4148	1.049E-02
S	5028(250)	10.16	9.25	5.125E-03	.3557	6.537E-03	.4536	5.977E-03	.4148	1.049E-02
I	3364(250)	11.24	10.32	4.850E-03	.3366	6.187E-03	.4294	5.657E-03	.3926	9.924E-03
S	5029(250)	11.24	10.32	4.850E-03	.3366	6.187E-03	.4294	5.657E-03	.3926	9.924E-03
I	3365(250)	12.34	11.43	4.611E-03	.3200	5.881E-03	.4081	5.377E-03	.3732	9.433E-03
S	5030(250)	12.34	11.43	4.611E-03	.3200	5.881E-03	.4081	5.377E-03	.3732	9.433E-03

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V41R-824

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

10- 8-74 PAGE 2

WRCUF CONFIG *** MODEL DESCRIPTION ***

GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP TYPE	R/L	DIA.	REA	RED
			S	.110	.039	3.010E 05	2.610E 03

85 11 TRIP

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.93	166.1	1271	39.96	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .060 FT)	SIREF (R= .060 FT)
93.6	.018	.793	3759	1.415E-05	7.536E-08	8.056E 05	1.441E-02	2.993E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	RETA(TO)
(OF(T)	404					
SIDF(S)	393	250	81	.0617	2.316E-01	2.5260E-01
50						

	FIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3366(250)	13.42	12.50	4.408E-03	.3050	5.622E-03	.3902	5.141E-03	.3568	9.018E-03
S	5031(250)	13.42	12.50	4.408E-03	.3050	5.622E-03	.3902	5.141E-03	.3568	9.018E-03
I	3367(250)	14.49	13.58	4.230E-03	.2935	5.395E-03	.3744	4.933E-03	.3423	8.653E-03
S	5032(250)	14.49	13.58	4.230E-03	.2935	5.395E-03	.3744	4.933E-03	.3423	8.653E-03
I	3368(250)	15.57	14.65	4.071E-03	.2826	5.193E-03	.3604	4.748E-03	.3295	8.330E-03
S	5033(250)	15.57	14.65	4.071E-03	.2826	5.193E-03	.3604	4.748E-03	.3295	8.330E-03
I	3369(250)	16.64	15.73	3.930E-03	.2727	5.012E-03	.3478	4.583E-03	.3181	8.040E-03
S	5034(250)	16.64	15.73	3.930E-03	.2727	5.012E-03	.3478	4.583E-03	.3181	8.040E-03
I	3370(250)	17.72	16.81	3.802E-03	.2638	4.849E-03	.3365	4.434E-03	.3077	7.778E-03
S	5035(250)	17.72	16.81	3.802E-03	.2638	4.849E-03	.3365	4.434E-03	.3077	7.778E-03
I	3371(250)	18.82	17.91	3.683E-03	.2556	4.697E-03	.3260	4.295E-03	.2981	7.535E-03
S	5036(250)	18.82	17.91	3.683E-03	.2556	4.697E-03	.3260	4.295E-03	.2981	7.535E-03
I	3372(250)	19.90	18.98	3.577E-03	.2482	4.562E-03	.3166	4.172E-03	.2895	7.318E-03
S	5037(250)	19.90	18.98	3.577E-03	.2482	4.562E-03	.3166	4.172E-03	.2895	7.318E-03
I	3373(250)	20.97	20.06	3.480E-03	.2415	4.438E-03	.3080	4.058E-03	.2817	7.119E-03
S	5038(250)	20.97	20.06	3.480E-03	.2415	4.438E-03	.3080	4.058E-03	.2817	7.119E-03
I	3374(250)	22.05	21.14	3.340E-03	.2353	4.326E-03	.3001	3.954E-03	.2744	6.936E-03
S	5039(250)	22.05	21.14	3.340E-03	.2353	4.326E-03	.3001	3.954E-03	.2744	6.936E-03
I	3375(250)	23.13	22.21	3.307E-03	.2295	4.218E-03	.2927	3.857E-03	.2677	6.766E-03
S	5040(250)	23.13	22.21	3.307E-03	.2295	4.218E-03	.2927	3.857E-03	.2677	6.766E-03
I	3376(250)	24.23	23.31	3.228E-03	.2240	4.117E-03	.2857	3.764E-03	.2613	6.604E-03
S	5041(250)	24.23	23.31	3.228E-03	.2240	4.117E-03	.2857	3.764E-03	.2613	6.604E-03
		24.10		MODEL HAS LEFT CENTERLINE						
I	3377(250)	25.30	24.39	3.156E-03	.2190	4.025E-03	.2793	3.680E-03	.2554	6.457E-03
S	5042(250)	25.30	24.39	3.156E-03	.2190	4.025E-03	.2793	3.680E-03	.2554	6.457E-03

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
05	11	TRIP				S	.110	.039	3.010E 05	2.618E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.93	166.1	1271	30.96	-9.96	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STHEF (W= .040 FT)
93.4	.018	.793	3759	1.615E-05	7.536E-08	8.056E 05	1.441F-02	2.993E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
(OF(I))	406					
SICE(S)	293	250	81	.0617	7.316E-01	2.5260E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3374(250)	26.38	25.47	3.08HE-03	.2143	3.939E-03	.2734	3.602E-03	.2500	6.319E-03
2	5044(250)	26.38	25.47	3.08HE-03	.2143	3.939E-03	.2734	3.602E-03	.2500	6.319E-03
1	3374(250)	27.46	26.54	3.025E-03	.2099	3.85HE-03	.2678	3.52HE-03	.2449	6.189E-03
2	5044(250)	27.46	26.54	3.025E-03	.2099	3.85HE-03	.2678	3.52HE-03	.2449	6.189E-03

GROUP 86 MELT LINES NOT READABLE

NASA-RI OH 54 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-74 PAGE 1

V418-828 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
06	11	TRIP				S	.110	.039	3.843E 05	2.640E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.93	145.5	1261	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
92.8	.018	.790	3744	1.622E-05	7.475E-08	8.124E 05	1.436E-02	2. 86E-02

CAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TBAR(TO)	BETA(TO)
10F(T)	404					
5ICE(S)	393	175	79	.0573	1.330E-01	1.3192E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3381(175)	.48		MODEL HAS NOT REACHED CENTERLINE						
5	5046(175)	.48		MODEL HAS NOT REACHED CENTERLINE						
1	3382(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
5	5047(175)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
1	3383(175)	2.63	1.71	5.773E-03	.4019	7.180E-03	.4999	6.967E-03	.4851	1.186E-02
5	5048(175)	2.63	1.71	5.773E-03	.4019	7.180E-03	.4999	6.967E-03	.4851	1.186E-02
1	3384(175)	3.68	2.77	4.545E-03	.3165	5.653E-03	.3936	5.486E-03	.3819	9.338E-03
5	5049(175)	3.68	2.77	4.545E-03	.3165	5.653E-03	.3936	5.486E-03	.3819	9.338E-03
56		3.93								
1	3385(175)	4.76	3.84	3.856E-03	.2685	4.796E-03	.3340	4.654E-03	.3241	7.923E-03
5	5050(175)	4.76	3.84	3.856E-03	.2685	4.796E-03	.3340	4.654E-03	.3241	7.923E-03
1	3386(175)	5.83	4.92	3.408E-03	.2373	4.239E-03	.2952	4.114E-03	.2864	7.003E-03
5	5051(175)	5.83	4.92	3.408E-03	.2373	4.239E-03	.2952	4.114E-03	.2864	7.003E-03
1	3387(175)	6.93	6.02	3.081E-03	.2145	3.832E-03	.2668	3.718E-03	.2589	6.330E-03
5	5052(175)	6.93	6.02	3.081E-03	.2145	3.832E-03	.2668	3.718E-03	.2589	6.330E-03
1	3388(175)	8.01	7.10	2.838E-03	.1976	3.529E-03	.2457	3.425E-03	.2385	5.830E-03
5	5053(175)	8.01	7.10	2.838E-03	.1976	3.529E-03	.2457	3.425E-03	.2385	5.830E-03
1	3389(175)	9.09	8.17	2.644E-03	.1841	3.289E-03	.2290	3.191E-03	.2222	5.433E-03
5	5054(175)	9.09	8.17	2.644E-03	.1841	3.289E-03	.2290	3.191E-03	.2222	5.433E-03
1	3390(175)	10.16	9.25	2.486E-03	.1731	3.092E-03	.2152	3.000E-03	.2089	5.107E-03
5	5055(175)	10.16	9.25	2.486E-03	.1731	3.092E-03	.2152	3.000E-03	.2089	5.107E-03
1	3391(175)	11.26	10.35	2.350E-03	.1636	2.922E-03	.2035	2.836E-03	.1974	4.828E-03
5	5056(175)	11.26	10.35	2.350E-03	.1636	2.922E-03	.2035	2.836E-03	.1974	4.828E-03
1	3392(175)	12.34	11.43	2.236E-03	.1557	2.781E-03	.1937	2.694E-03	.1879	4.595E-03
5	5057(175)	12.34	11.43	2.236E-03	.1557	2.781E-03	.1937	2.694E-03	.1879	4.595E-03

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V41R-820

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GRCUP CONFIG *** MODEL DESCRIPTION ***

86 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
			S	.110	.039	3.843E 05	2.640E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.93	165.5	1201	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1) *	HREF (R= .040 FT)	STREF (R= .040 FT)
92.8	.018	.798	3744	1.622E-05	7.475E-08	8.124E 05	1.436E-02	2.984E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOAC&K)	TBAR(TO)	BETA(TO)
10F(T)	406					
SIDE(S)	393	175	79	.8573	1.330E-01	1.3192E-08
S6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3393(175)	13.44	12.53	2.136E-03	.1487	2.656E-03	.1849	2.578E-03	.1795	4.308E-03
S	5054(175)	13.44	12.53	2.136E-03	.1487	2.656E-03	.1849	2.578E-03	.1795	4.308E-03
I	3394(175)	14.52	13.60	2.050E-03	.1427	2.549E-03	.1775	2.474E-03	.1722	4.211E-03
S	5055(175)	14.52	13.60	2.050E-03	.1427	2.549E-03	.1775	2.474E-03	.1722	4.211E-03
I	3395(175)	15.59	14.68	1.973E-03	.1374	2.454E-03	.1708	2.381E-03	.1658	4.054E-03
S	5056(175)	15.59	14.68	1.973E-03	.1374	2.454E-03	.1708	2.381E-03	.1658	4.054E-03
I	3396(175)	16.67	15.76	1.904E-03	.1326	2.369E-03	.1649	2.298E-03	.1600	3.913E-03
S	5061(175)	16.67	15.76	1.904E-03	.1326	2.369E-03	.1649	2.298E-03	.1600	3.913E-03
I	3397(175)	17.75	16.83	1.842E-03	.1283	2.292E-03	.1596	2.224E-03	.1548	3.786E-03
S	5062(175)	17.75	16.83	1.842E-03	.1283	2.292E-03	.1596	2.224E-03	.1548	3.786E-03
I	3398(175)	18.82	17.91	1.786E-03	.1244	2.222E-03	.1547	2.156E-03	.1501	3.670E-03
S	5063(175)	18.82	17.91	1.786E-03	.1244	2.222E-03	.1547	2.156E-03	.1501	3.670E-03
I	3399(175)	19.90	18.98	1.735E-03	.1208	2.158E-03	.1502	2.094E-03	.1458	3.564E-03
S	5064(175)	19.90	18.98	1.735E-03	.1208	2.158E-03	.1502	2.094E-03	.1458	3.564E-03
I	3400(175)	20.97	20.06	1.688E-03	.1175	2.099E-03	.1461	2.037E-03	.1418	3.468E-03
S	5065(175)	20.97	20.06	1.688E-03	.1175	2.099E-03	.1461	2.037E-03	.1418	3.468E-03
I	3401(175)	22.05	21.14	1.644E-03	.1145	2.045E-03	.1424	1.984E-03	.1382	3.378E-03
S	5066(175)	22.05	21.14	1.644E-03	.1145	2.045E-03	.1424	1.984E-03	.1382	3.378E-03
I	3402(175)	23.15	22.24	1.603E-03	.1116	1.994E-03	.1388	1.935E-03	.1347	3.293E-03
S	5067(175)	23.15	22.24	1.603E-03	.1116	1.994E-03	.1388	1.935E-03	.1347	3.293E-03
I	3403(175)	24.23	23.31	1.566E-03	.1090	1.947E-03	.1356	1.889E-03	.1315	3.216E-03
S	5068(175)	24.23	23.31	1.566E-03	.1090	1.947E-03	.1356	1.889E-03	.1315	3.216E-03
		24.58		MODEL HAS LEFT CENTERLINE						
I	3404(175)	25.30	24.39	1.531E-03	.1066	1.904E-03	.1325	1.847E-03	.1286	3.145E-03
S	5069(175)	25.30	24.39	1.531E-03	.1066	1.904E-03	.1325	1.847E-03	.1286	3.145E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RE8	RE0
06	13	TRIP				S	.110	.039	3.043E 05	2.640E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.93	165.5	1261	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	MREF (R= .040 FT)	STREF (R= .040 FT)
92.8	.018	.796	3744	1.422E-05	7.475E-08	8.124E 05	1.436E-02	2.984E-02

CAPFRA (OF(T) >ICE(S) >6	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRAN(TO)	BETA(TO)
	406					
	393	175	79	.0573	1.330E-01	1.3192E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3405(175)	26.38	25.47	1.498E-03	.1043	1.863E-03	.1297	1.808E-03	.1259	3.078E-03
>	5070(175)	26.38	25.47	1.498E-03	.1043	1.863E-03	.1297	1.808E-03	.1259	3.078E-03
1	3406(175)	27.46	26.54	1.467E-03	.1022	1.825E-03	.1271	1.771E-03	.1233	3.014E-03
>	5071(175)	27.46	26.54	1.467E-03	.1022	1.825E-03	.1271	1.771E-03	.1233	3.014E-03

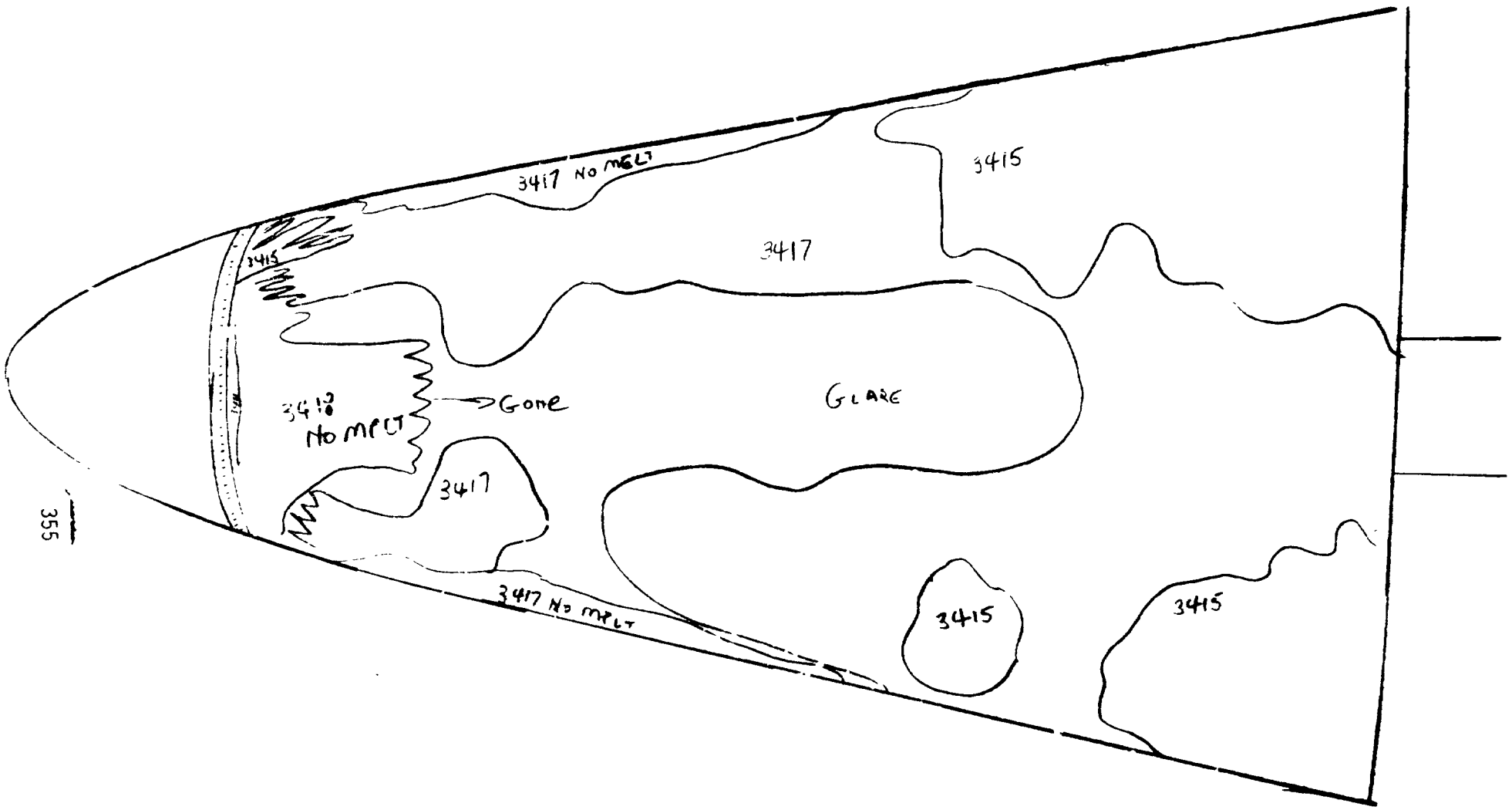
406
6P87

75 PSIA
835°F

$\alpha = 3.$

$T_{PC} = 250°F$

3411 ℄



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V41H-824 VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL H

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
87	18	TRIP				S	.110	.039	8.341E 05	5.731E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	TAU
7.97	374.8	1285	20.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	ML-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
93.0	.039	1.749	3781	3.520E-05	7.54HE-08	1.763E 06	2.144E-02	2.038E-02

LAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUACAK)	TBAR(TO)	BETA(TO)
IOF(T)	404					
SICF(S)	393	250	77	.0617	2.313E-01	2.5226E-01
SG						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/HREF	M(.9TO)	M(.9TO)/HRE	M(.912TO)	M(.912TO)/HREF	S1(TO)
I	3408(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
S	5073(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	3409(250)	1.58		MODEL HAS NOT REACHED CENTERLINE						
S	5074(250)	1.58		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	3410(250)	2.65	1.73	1.185E-02	.5526	1.506E-02	.7023	1.457E-02	.6793	1.185E-02
S	5075(250)	2.65	1.73	1.185E-02	.5526	1.506E-02	.7023	1.457E-02	.6793	1.185E-02
I	3411(250)	3.73	2.80	9.298E-03	.4337	1.182E-02	.5511	1.143E-02	.5331	8.669E-03
S	5076(250)	3.73	2.80	9.298E-03	.4337	1.182E-02	.5511	1.143E-02	.5331	8.669E-03
SG		3.98								
I	3412(250)	4.81	3.88	7.903E-03	.3686	1.004E-02	.4685	9.716E-03	.4532	7.369E-03
S	5077(250)	4.81	3.88	7.903E-03	.3686	1.004E-02	.4685	9.716E-03	.4532	7.369E-03
I	3413(250)	5.88	4.95	6.993E-03	.3261	8.886E-03	.4145	8.596E-03	.4009	6.519E-03
S	5078(250)	5.88	4.95	6.993E-03	.3261	8.886E-03	.4145	8.596E-03	.4009	6.519E-03
I	3414(250)	6.96	6.03	6.338E-03	.2956	8.054E-03	.3757	7.791E-03	.3634	5.909E-03
S	5079(250)	6.98	6.06	6.325E-03	.2950	8.038E-03	.3749	7.775E-03	.3626	5.897E-03
I	3415(250)	8.06	7.13	5.828E-03	.2718	7.407E-03	.3454	7.165E-03	.3342	5.434E-03
S	5080(250)	8.06	7.13	5.828E-03	.2718	7.407E-03	.3454	7.165E-03	.3342	5.434E-03
I	3416(250)	9.14	8.21	5.433E-03	.2534	6.904E-03	.3220	6.676E-03	.3115	5.065E-03
S	5081(250)	9.14	8.21	5.433E-03	.2534	6.904E-03	.3220	6.676E-03	.3115	5.065E-03
I	3417(250)	10.21	9.28	5.108E-03	.2382	6.491E-03	.3028	6.279E-03	.2929	4.762E-03
S	5082(250)	10.21	9.28	5.108E-03	.2382	6.491E-03	.3028	6.279E-03	.2929	4.762E-03
I	3418(250)	11.29	10.36	4.835E-03	.2255	6.145E-03	.2866	5.944E-03	.2773	4.508E-03
S	5083(250)	11.29	10.36	4.835E-03	.2255	6.145E-03	.2866	5.944E-03	.2773	4.508E-03
		11.84		MODEL HAS LEFT CENTERLINE						
I	3419(250)	12.36	11.44	4.602E-03	.2147	5.849E-03	.2728	5.658E-03	.2639	4.291E-03
S	5084(250)	12.36	11.44	4.602E-03	.2147	5.849E-03	.2728	5.658E-03	.2639	4.291E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REA	REO
07	11	TRIP				S	.110	.099	8.341E 05	5.731E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRESENT	ROLL-MODEL	YAW
7.97	376.8	1285	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	MREF (H= .040 FT)	STREF (H= .040 FT)
93.8	.039	1.765	3741	3.520E-05	7.548E-08	1.763E 06	2.144E-02	2.038E-02

LAMFRA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAR)	TRAN(TO)	BETA(TO)
10F(T)	406					
SICE(S)	303	250	77	.0417	2.313E-01	2.5226E-01
36						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3420(250)	13.47	12.56	4.346E-03	.2050	5.586E-03	.2605	5.404E-03	.2520	4.098E-03
5	5045(250)	13.47	12.56	4.346E-03	.2050	5.586E-03	.2605	5.404E-03	.2520	4.098E-03
1	3421(250)	14.54	13.61	4.218E-03	.1967	5.361E-03	.2500	5.186E-03	.2419	3.933E-03
5	5046(250)	14.54	13.61	4.218E-03	.1967	5.361E-03	.2500	5.186E-03	.2419	3.933E-03

406
GP88

375 PSIA
835°F

$\alpha = 4\mu$

$T_{PC} = 400°F$

NO USEFUL INFO

PAINT TEMP TOO HIGH

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V41R-826 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP CONFIG *** MODEL DESCRIPTION ***

GROUP	CONFIG	MODEL DESCRIPTION
88	11	TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REB
			S	.110	.039	0.276E 05	5.606E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.97	175.5	1293	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	MREF (R= .040 FT)	SIREF (R= .040 FT)
94.4	.039	1.752	1794	3.504E-05	7.598E-08	1.750E 06	2.148E-02	2.036E-02

CAMERA (OF(T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKA)	TRAN(TO)	BETA(TO)
	406					
>ICE(S)	392	400	78	.0660	4.263E-01	5.8780E-01
>6						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.9TO)	M(.9TO)/MREF	M(.934TO)	M(.934TO)/MREF	ST(TO)
I	3423(400)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5088(400)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3424(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5089(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	3425(400)	2.63	1.71	2.959E-02	1.3771	4.0846E-02	1.9009	3.613E-02	1.6818	2.739E-02
>	5090(400)	2.63	1.71	2.959E-02	1.3771	4.0846E-02	1.9009	3.613E-02	1.6818	2.739E-02
I	3426(400)	3.70	2.79	2.319E-02	1.0794	3.201E-02	1.4900	2.832E-02	1.3182	2.147E-02
>	5091(400)	3.70	2.79	2.319E-02	1.0794	3.201E-02	1.4900	2.832E-02	1.3182	2.147E-02
>6			3.95							
I	3427(400)	4.78	3.87	1.970E-02	.9170	2.719E-02	1.2658	2.406E-02	1.1199	1.824E-02
>	5092(400)	4.78	3.87	1.970E-02	.9170	2.719E-02	1.2658	2.406E-02	1.1199	1.824E-02
I	3428(400)	5.88	4.97	1.738E-02	.8090	2.399E-02	1.1167	2.123E-02	.9880	1.609E-02
>	5093(400)	5.88	4.97	1.738E-02	.8090	2.399E-02	1.1167	2.123E-02	.9880	1.609E-02
I	3429(400)	6.96	6.04	1.576E-02	.7334	2.175E-02	1.0124	1.924E-02	.8957	1.459E-02
>	5094(400)	6.96	6.04	1.576E-02	.7334	2.175E-02	1.0124	1.924E-02	.8957	1.459E-02
I	3430(400)	8.03	7.12	1.452E-02	.6757	2.004E-02	.9328	1.773E-02	.8253	1.344E-02
>	5095(400)	8.03	7.12	1.452E-02	.6757	2.004E-02	.9328	1.773E-02	.8253	1.344E-02
I	3431(400)	9.11	8.20	1.353E-02	.6298	1.868E-02	.8694	1.653E-02	.7692	1.253E-02
>	5096(400)	9.14	8.22	1.351E-02	.6289	1.865E-02	.8681	1.650E-02	.7680	1.251E-02
I	3432(400)	10.21	9.30	1.271E-02	.5914	1.754E-02	.8163	1.552E-02	.7222	1.176E-02
>	5097(400)	10.21	9.30	1.271E-02	.5914	1.754E-02	.8163	1.552E-02	.7222	1.176E-02
I	3433(400)	11.29	10.37	1.203E-02	.5598	1.660E-02	.7728	1.469E-02	.6837	1.113E-02
>	5098(400)	11.29	10.37	1.203E-02	.5598	1.660E-02	.7728	1.469E-02	.6837	1.113E-02
I	3434(400)	12.34	11.43	1.146E-02	.5335	1.582E-02	.7364	1.400E-02	.6515	1.061E-02
>	5099(400)	12.34	11.43	1.146E-02	.5335	1.582E-02	.7364	1.400E-02	.6515	1.061E-02

V41H-H2A

URCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REG	HED
88	11	TRIP				5	.110	.039	0.276E 05	5.006E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	375.5	1293	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.4	.039	1.752	3794	1.504E-05	7.598E-08	1.750E 06	2.148E-02	2.034E-02

CAMERA (OF(T) >ICE(S) >6	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACRA)	TBAR(TO)	HETA(TO)
	406					
	293	400	70	.0668	4.263E-01	5.8700E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3435(400)	13.44	12.53	1.095E-02	.5095	1.511E-02	.7033	1.337E-02	.6222	1.013E-02
>	5100(400)	13.44	12.53	1.095E-02	.5095	1.511E-02	.7033	1.337E-02	.6222	1.013E-02
I	3436(400)	14.52	13.60	1.050E-02	.4889	1.450E-02	.6749	1.283E-02	.5971	9.724E-03
>	5101(400)	14.52	13.60	1.050E-02	.4889	1.450E-02	.6749	1.283E-02	.5971	9.724E-03
I	3437(400)	15.62	14.70	1.010E-02	.4702	1.395E-02	.6491	1.234E-02	.5743	9.353E-03
>	5102(400)	15.62	14.70	1.010E-02	.4702	1.395E-02	.6491	1.234E-02	.5743	9.353E-03
	3438(400)	16.69	15.78	9.752E-03	.4539	1.346E-02	.6266	1.191E-02	.5544	9.028E-03
>	5103(400)	16.69	15.78	9.752E-03	.4539	1.346E-02	.6266	1.191E-02	.5544	9.028E-03
I	434(400)	17.77	16.86	9.436E-03	.4392	1.303E-02	.6063	1.152E-02	.5364	8.735E-03
>	5104(400)	17.77	16.86	9.436E-03	.4392	1.303E-02	.6063	1.152E-02	.5364	8.735E-03
I	3440(400)	18.85	17.93	9.148E-03	.4258	1.263E-02	.5878	1.117E-02	.5200	8.469E-03
>	5105(400)	18.85	17.93	9.148E-03	.4258	1.263E-02	.5878	1.117E-02	.5200	8.469E-03
I	3441(400)	19.95	19.03	8.888E-03	.4133	1.226E-02	.5705	1.084E-02	.5048	8.220E-03
>	5106(400)	19.95	19.03	8.888E-03	.4133	1.226E-02	.5705	1.084E-02	.5048	8.220E-03
I	3442(400)	21.02	20.11	8.639E-03	.4021	1.193E-02	.5550	1.055E-02	.4911	7.997E-03
>	5107(400)	21.02	20.11	8.639E-03	.4021	1.193E-02	.5550	1.055E-02	.4911	7.997E-03
I	3443(400)	22.08	21.16	8.422E-03	.3920	1.163E-02	.5411	1.029E-02	.4787	7.796E-03
>	5108(400)	22.08	21.16	8.422E-	.3920	1.163E-02	.5411	1.029E-02	.4787	7.796E-03
		22.60		MODEL	CENTERLINE					
I	3444(400)	23.18	22.26	8.211	.3822	1.133E-02	.5275	1.003E-02	.4667	7.601E-03
>	5109(400)	23.18	22.26	8.211E-03	.3822	1.133E-02	.5275	1.003E-02	.4667	7.601E-03
I	3445(400)	24.25	23.34	8.019E-03	.3733	1.107E-02	.5152	9.794E-03	.4558	7.424E-03
>	5110(400)	24.25	23.34	8.019E-03	.3733	1.107E-02	.5152	9.794E-03	.4558	7.424E-03
>	5111(400)	25.33	24.42	7.840E-03	.3649	1.082E-02	.5037	9.575E-03	.4457	7.258E-03
I	3446(400)	25.35	24.44	7.836E-03	.3647	1.082E-02	.5035	9.571E-03	.4455	7.255E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	REX	REU
88	19	TRIP				5	.118	.039	0.276E 05	5.606E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.97	375.5	1293	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
94.4	.039	1.752	3796	5.504E-05	7.5986E-08	1.750E 06	2.148E-02	2.036E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCKA)	TRAN(TO)	BETA(TO)
IOF(T)	406					
SIDE(S)	393	400	78	.0660	4.263E-01	5.8700E-01
56						

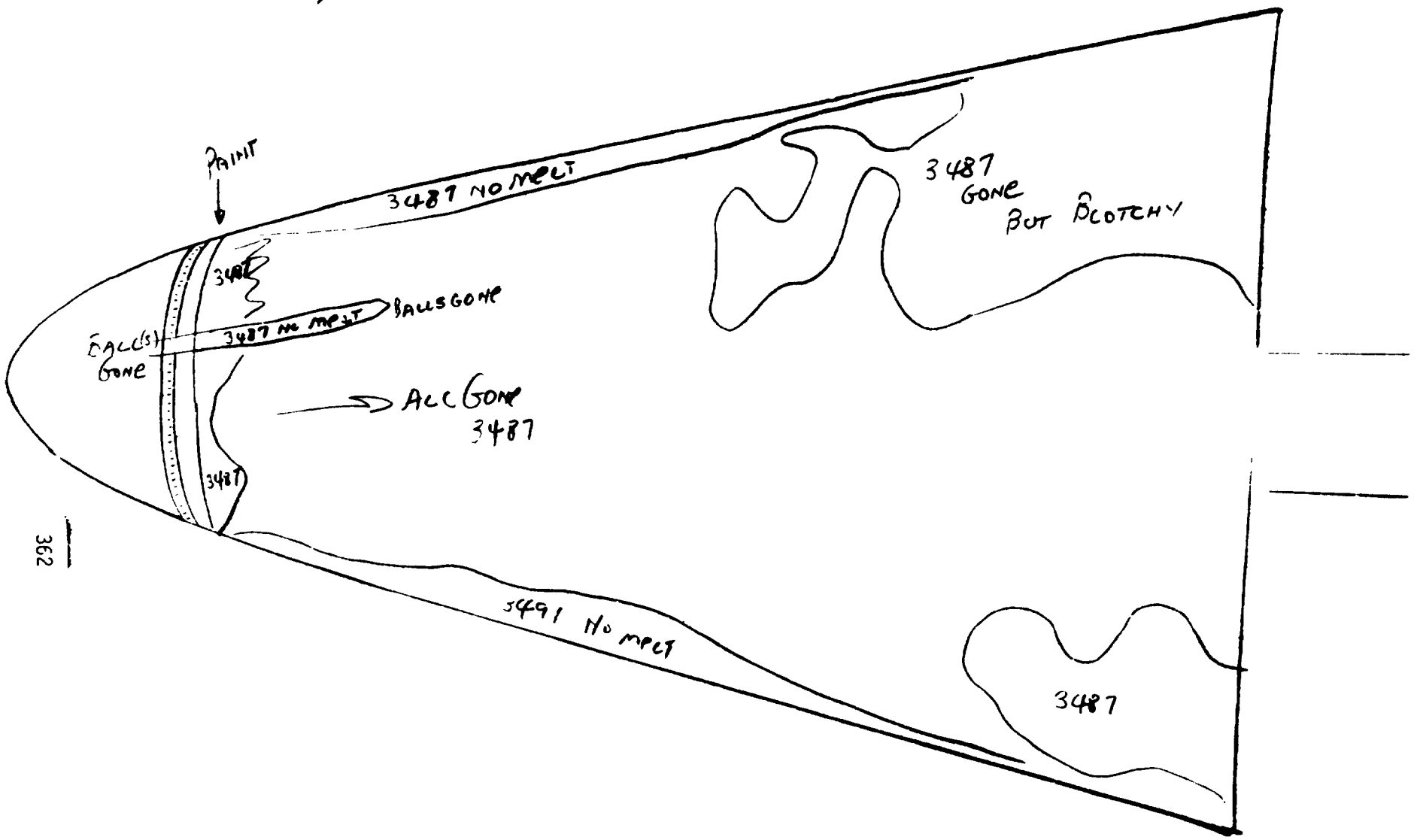
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3447(400)	26.41	25.49	7.673E-03	.3571	1.059E-02	.4930	9.371E-03	.4362	7.103E-03
2	5112(400)	26.41	25.49	7.673E-03	.3571	1.059E-02	.4930	9.371E-03	.4362	7.103E-03

400
GP89
375 PSIA
835 °F

T_{PC} = 350 °F

α = 40°

3475 ℄



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V419-A28 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REX	HED
89	11	TRIP				5	.110	.039	8.318E 05	5.716E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	376.1	1250	39.98	-9.98	10.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	BTREF (R= .040 FT)
94.1	.039	1.755	3784	3.518E-05	7.580E-08	1.759E 06	2.140E-02	2.031E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCXK)	TRAN(TO)	BETA(TO)
10F(T)	400					
51CE(S)	291	350	89	.0652	3.556E-01	4.6612E-01
>6						

REC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
1 3476(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
> 5137(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
1 3473(50)	1.53		MODEL HAS NOT REACHED CENTERLINE						
> 5138(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65							
1 3474(350)	2.60	1.68	2.247E-02	1.0455	2.948E-02	1.3969	2.691E-02	1.2521	2.080E-02
> 5134(350)	2.60	1.68	2.247E-02	1.0455	2.948E-02	1.3969	2.691E-02	1.2521	2.080E-02
> 5140(350)	3.65	2.73	1.761E-02	.8195	2.350E-02	1.0935	2.110E-02	.9815	1.631E-02
1 3475(350)	3.68	2.76	1.753E-02	.8159	2.340E-02	1.0885	2.100E-02	.9771	1.623E-02
>6		3.99							
1 3476(350)	4.73	3.84	1.492E-02	.6940	1.990E-02	.9259	1.786E-02	.8311	1.381E-02
> 5141(350)	4.73	3.84	1.492E-02	.6940	1.990E-02	.9259	1.786E-02	.8311	1.381E-02
1 3477(350)	5.81	4.88	1.317E-02	.6127	1.757E-02	.8175	1.577E-02	.7338	1.219E-02
> 5142(350)	5.81	4.88	1.317E-02	.6127	1.757E-02	.8175	1.577E-02	.7338	1.219E-02
1 3478(350)	6.86	5.93	1.194E-02	.5557	1.594E-02	.7415	1.430E-02	.6656	1.106E-02
> 5143(350)	6.86	5.93	1.194E-02	.5557	1.594E-02	.7415	1.430E-02	.6656	1.106E-02
1 3479(350)	7.93	7.01	1.099E-02	.5113	1.466E-02	.6822	1.316E-02	.6123	1.017E-02
> 5144(350)	7.93	7.01	1.099E-02	.5113	1.466E-02	.6822	1.316E-02	.6123	1.017E-02
1 3480(350)	9.01	8.08	1.023E-02	.4760	1.365E-02	.6351	1.225E-02	.5701	9.472E-03
> 5145(350)	9.01	8.08	1.023E-02	.4760	1.365E-02	.6351	1.225E-02	.5701	9.472E-03
1 3481(350)	10.06	9.13	9.624E-03	.4478	1.284E-02	.5975	1.153E-02	.5363	8.910E-03
> 5146(350)	10.06	9.13	9.624E-03	.4478	1.284E-02	.5975	1.153E-02	.5363	8.910E-03
1 3482(350)	11.14	10.21	9.103E-03	.4235	1.215E-02	.5651	1.090E-02	.5072	8.427E-03
> 5147(350)	11.14	10.21	9.103E-03	.4235	1.215E-02	.5651	1.090E-02	.5072	8.427E-03
1 3483(350)	12.21	11.29	8.658E-03	.4028	1.155E-02	.5375	1.037E-02	.4824	8.016E-03
> 5148(350)	12.21	11.29	8.658E-03	.4028	1.155E-02	.5375	1.037E-02	.4824	8.016E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
20	11	TRIP				S	.110	.039	8.318E 05	5.716E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.97	376.1	1240	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
94.1	.039	1.755	3789	3.518E-05	7.580E-08	1.759E 04	2.149E-02	2.031E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TBAR(TO)	BETA(TO)
TOP(T)	400					
SIDE(S)	291	350	85	.0652	3.556E-01	4.4612E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
T	3488(350)	13.29	12.34	8.273E-03	.3849	1.104E-02	.5135	9.908E-03	.4610	7.659E-03
S	5149(350)	13.29	12.34	8.273E-03	.3849	1.104E-02	.5135	9.908E-03	.4610	7.659E-03
T	3485(350)	14.37	13.44	7.934E-03	.3692	1.059E-02	.4926	9.503E-03	.4421	7.346E-03
S	5150(350)	14.37	13.44	7.934E-03	.3692	1.059E-02	.4926	9.503E-03	.4421	7.346E-03
T	3486(350)	15.42	14.49	7.641E-03	.3555	1.020E-02	.4744	9.151E-03	.4258	7.074E-03
S	5151(350)	15.42	14.49	7.641E-03	.3555	1.020E-02	.4744	9.151E-03	.4258	7.074E-03
T	3487(350)	16.49	15.57	7.372E-03	.3430	9.836E-03	.4577	8.829E-03	.4108	6.825E-03
S	5152(350)	16.49	15.57	7.372E-03	.3430	9.836E-03	.4577	8.829E-03	.4108	6.825E-03
T	3488(350)	17.57	16.64	7.130E-03	.3317	9.513E-03	.4426	8.534E-03	.3973	6.601E-03
S	5153(350)	17.57	16.64	7.130E-03	.3317	9.513E-03	.4426	8.534E-03	.3973	6.601E-03
T	3489(350)	18.62	17.69	6.915E-03	.3217	9.226E-03	.4293	8.282E-03	.3853	6.402E-03
S	5154(350)	18.62	17.69	6.915E-03	.3217	9.226E-03	.4293	8.282E-03	.3853	6.402E-03
T	3490(350)	19.70	18.77	6.714E-03	.3124	8.958E-03	.4168	8.041E-03	.3741	6.216E-03
S	5155(350)	19.70	18.77	6.714E-03	.3124	8.958E-03	.4168	8.041E-03	.3741	6.216E-03
T	3491(350)	20.77	19.85	6.529E-03	.3038	8.712E-03	.4053	7.820E-03	.3638	6.045E-03
S	5156(350)	20.77	19.85	6.529E-03	.3038	8.712E-03	.4053	7.820E-03	.3638	6.045E-03
T	3492(350)	21.85	20.92	6.359E-03	.2959	8.485E-03	.3948	7.616E-03	.3543	5.887E-03
S	5157(350)	21.85	20.92	6.359E-03	.2959	8.485E-03	.3948	7.616E-03	.3543	5.887E-03
		22.38		MODEL HAS LEFT CENTERLINE						
T	3493(350)	22.50	21.97	6.205E-03	.2887	8.279E-03	.3852	7.431E-03	.3458	5.745E-03
S	5158(350)	22.50	21.97	6.205E-03	.2887	8.279E-03	.3852	7.431E-03	.3458	5.745E-03
T	3494(350)	23.68	23.05	6.058E-03	.2819	8.083E-03	.3761	7.256E-03	.3376	5.609E-03
S	5159(350)	23.68	23.05	6.058E-03	.2819	8.083E-03	.3761	7.256E-03	.3376	5.609E-03

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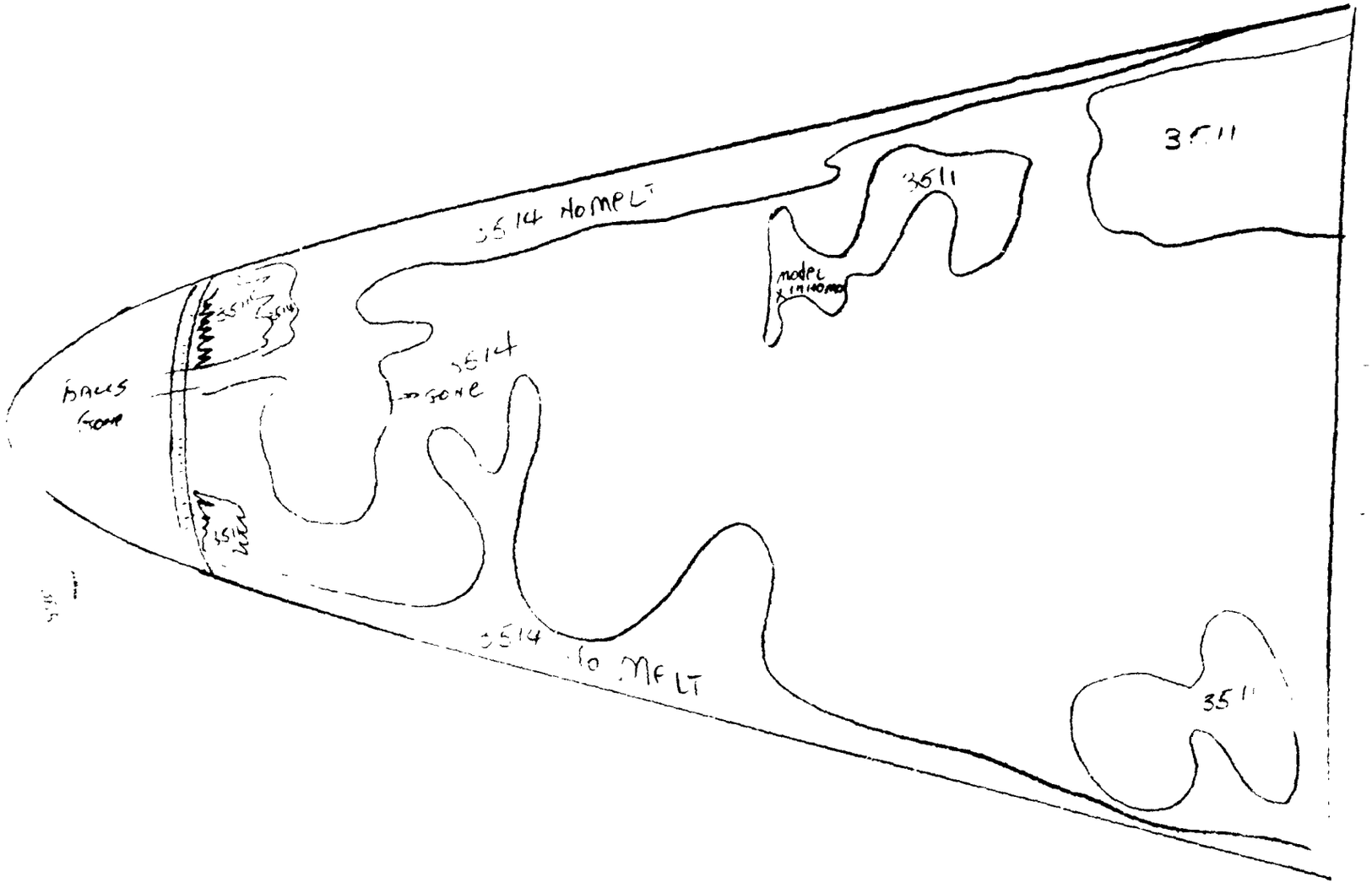

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V41R-R24

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	REO
9A	11	TRIP				S	.110	.099	8.291E 05	5.697E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.97	376.6	1294	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SREF (W= .040 FT)
94.4	.040	1.758	3795	3.512E-05	7.603E-08	1.753E 06	2.152E-02	2.034E-02

CAMERA (OF(T) SIDE(S)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACKR)	TRAR(TO)	BETA(TO)
	400					
36	391	350	85	.0652	3.537E-01	4.4269E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3496(350)	.50		MODEL HAS NOT REACHED CENTERLINE						
3	5161(350)	.50		MODEL HAS NOT REACHED CENTERLINE						
1	3497(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
3	5162(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.65							
1	3498(350)	2.60	1.68	2.230E-02	1.0362	2.970E-02	1.3804	2.668E-02	1.2399	2.064E-02
3	5163(350)	2.60	1.68	2.230E-02	1.0362	2.970E-02	1.3804	2.668E-02	1.2399	2.064E-02
1	3499(350)	3.68	2.75	1.740E-02	.8085	2.318E-02	1.0772	2.082E-02	.9675	1.611E-02
3	5164(350)	3.68	2.75	1.740E-02	.8085	2.318E-02	1.0772	2.082E-02	.9675	1.611E-02
3G			3.93							
1	3500(350)	4.76	3.83	1.475E-02	.6855	1.965E-02	.9133	1.765E-02	.8203	1.366E-02
3	5165(350)	4.76	3.83	1.475E-02	.6855	1.965E-02	.9133	1.765E-02	.8203	1.366E-02
1	3501(350)	5.81	4.88	1.307E-02	.6072	1.741E-02	.8089	1.564E-02	.7266	1.210E-02
3	5166(350)	5.81	4.88	1.307E-02	.6072	1.741E-02	.8089	1.564E-02	.7266	1.210E-02
1	3502(350)	6.88	5.94	1.183E-02	.5496	1.576E-02	.7322	1.415E-02	.6577	1.095E-02
3	5167(350)	6.88	5.94	1.183E-02	.5496	1.576E-02	.7322	1.415E-02	.6577	1.095E-02
1	3503(350)	7.96	7.03	1.088E-02	.5058	1.450E-02	.6738	1.302E-02	.6053	1.008E-02
3	5168(350)	7.96	7.03	1.088E-02	.5058	1.450E-02	.6738	1.302E-02	.6053	1.008E-02
1	3504(350)	9.01	8.08	1.015E-02	.4719	1.352E-02	.6285	1.215E-02	.5645	9.399E-03
3	5169(350)	9.01	8.08	1.015E-02	.4719	1.352E-02	.6285	1.215E-02	.5645	9.399E-03
1	3505(350)	10.09	9.16	9.537E-03	.4432	1.271E-02	.5904	1.141E-02	.5303	8.829E-03
3	5170(350)	10.09	9.16	9.537E-03	.4432	1.271E-02	.5904	1.141E-02	.5303	8.829E-03
1	3506(350)	11.16	10.24	9.022E-03	.4192	1.202E-02	.5585	1.080E-02	.5017	8.352E-03
3	5171(350)	11.16	10.24	9.022E-03	.4192	1.202E-02	.5585	1.080E-02	.5017	8.352E-03
1	3507(350)	12.24	11.31	8.582E-03	.3988	1.143E-02	.5313	1.027E-02	.4772	7.945E-03
3	5172(350)	12.24	11.31	8.582E-03	.3988	1.143E-02	.5313	1.027E-02	.4772	7.945E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RE1	RE2
90	11	TRIP				5	.110	.039	8.291E 05	5.697E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	376.6	1294	30.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
96.4	.040	1.758	1795	3.512E-05	7.803E-08	1.753E 06	2.152E-02	2.034E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACXK)	TRAR(TO)	BETA(TO)
10F(1)	400					
>ICE(S)	391	350	85	.0652	3.537E-01	4.4269E-01
>6						

PIC NO	TIME	ELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
350H(350)	13.32	12.39	8.201E-03	.3811	1.092E-02	.5077	9.813E-03	.4560	7.592E-03
>5173(350)	13.32	12.39	8.201E-03	.3811	1.092E-02	.5077	9.813E-03	.4560	7.592E-03
350J(350)	14.37	13.44	7.873E-03	.3658	1.049E-02	.4874	9.421E-03	.4378	7.289E-03
>5176(350)	14.39	13.46	7.866E-03	.3655	1.048E-02	.4870	9.412E-03	.4374	7.282E-03
>5175(350)	15.44	14.52	7.576E-03	.3521	1.009E-02	.4690	9.065E-03	.4213	7.014E-03
351 (350)	15.47	14.54	7.569E-03	.3518	1.008E-02	.4686	9.057E-03	.4209	7.008E-03
351L(350)	16.52	15.59	7.3 0E-03	.3397	9.738E-03	.4525	8.747E-03	.4065	6.767E-03
>5176(350)	16.52	15.59	7.310E-03	.3397	9.738E-03	.4525	8.747E-03	.4065	6.767E-03
>5177(350)	17.57	16.64	7.075E-03	.3288	9.425E-03	.4380	8.464E-03	.3934	6.550E-03
351Z(350)	17.60	16.67	7.070E-03	.3285	9.418E-03	.4377	8.458E-03	.3931	6.545E-03
351X(350)	18.65	17.72	6.857E-03	.3186	9.135E-03	.4245	8.205E-03	.3813	6.348E-03
>5178(350)	18.65	17.72	6.857E-03	.3186	9.135E-03	.4245	8.205E-03	.3813	6.348E-03
351W(350)	19.72	18.80	6.658E-03	.3094	8.869E-03	.4122	7.967E-03	.3702	6.164E-03
>5179(350)	19.72	18.80	6.658E-03	.3094	8.869E-03	.4122	7.967E-03	.3702	6.164E-03
351S(350)	20.77	19.85	6.479E-03	.3011	8.631E-03	.4011	7.753E-03	.3603	5.998E-03
>5180(350)	20.77	19.85	6.479E-03	.3011	8.631E-03	.4011	7.753E-03	.3603	5.998E-03
	21.20		MODEL HAS LEFT CENTERLINE						
351A(350)	21.85	20.92	6.310E-03	.2932	8.406E-03	.3906	7.551E-03	.3509	5.842E-03
>5181(350)	21.85	20.92	6.310E-03	.2932	8.406E-03	.3906	7.551E-03	.3509	5.842E-03
351J(350)	22.93	22.00	6.154E-03	.2860	8.198E-03	.3810	7.364E-03	.3422	5.697E-03
>5182(350)	22.93	22.00	6.154E-03	.2860	8.198E-03	.3810	7.364E-03	.3422	5.697E-03
351M(350)	24.00	23.08	6.006E-03	.2792	8.005E-03	.3720	7.190E-03	.3341	5.563E-03
>5183(350)	24.00	23.08	6.006E-03	.2792	8.005E-03	.3720	7.190E-03	.3341	5.563E-03

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375 PSIA

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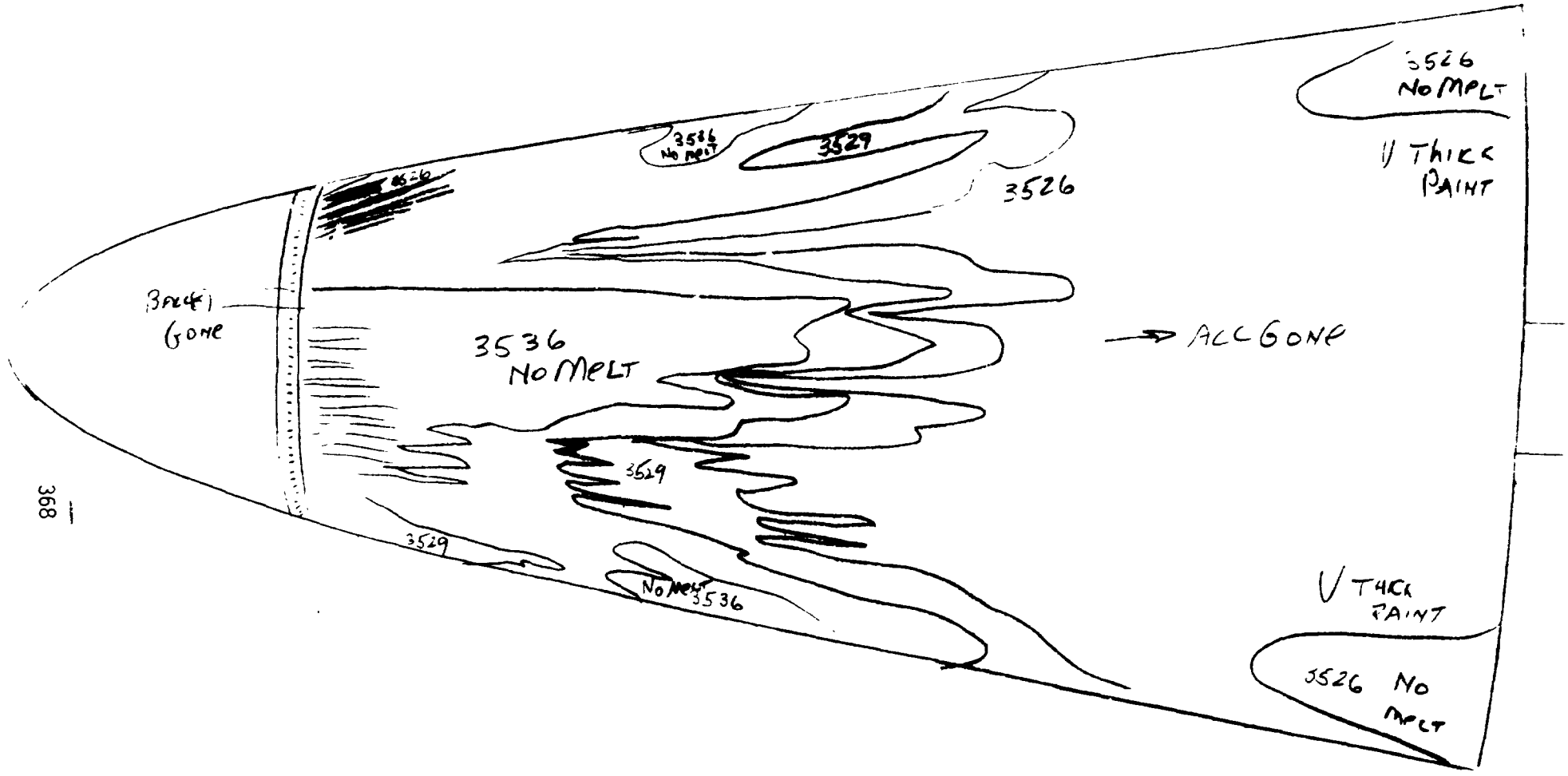

NASA-HI OF 56

AEDC(APO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

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WRCUR CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REX	REB
			X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
51	11	TRIP				S	.110	.039	8.350E 05	5.737E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	375.5	1286	19.97	10.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
93.0	.039	1.752	3782	3.525E-05	7.552E-08	1.765E 06	2.146E-02	2.028E-02

CAPSHA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACKK)	TRAR(TO)	BETA(TO)
.06(T)	400					
SICE(S)	391	176	85	.0573	1.215E-01	1.1928E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3520(176)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5145(176)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3521(176)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	5146(176)	1.53		MODEL HAS NOT REACHED CENTERLINE						
IMPACT TIME =		1.63								
I	3522(176)	2.60	1.65	5.254E-03	.2450	6.511E-03	.3034	6.635E-03	.3091	4.914E-03
>	5147(176)	2.60	1.69	5.254E-03	.2450	6.511E-03	.3034	6.635E-03	.3091	4.914E-03
I	3523(176)	3.68	2.77	4.110E-03	.1915	5.089E-03	.2371	5.184E-03	.2416	3.841E-03
>	5148(176)	3.68	2.77	4.110E-03	.1915	5.089E-03	.2371	5.184E-03	.2416	3.841E-03
SG		3.91								
I	3524(176)	4.73	3.82	3.498E-03	.1630	4.332E-03	.2019	4.414E-03	.2057	3.269E-03
>	5149(176)	4.73	3.82	3.498E-03	.1630	4.332E-03	.2019	4.414E-03	.2057	3.269E-03
I	3525(176)	5.81	4.86	3.090E-03	.1440	3.826E-03	.1783	3.894E-03	.1817	2.888E-03
>	5150(176)	5.81	4.86	3.090E-03	.1440	3.826E-03	.1783	3.894E-03	.1817	2.888E-03
I	3526(176)	6.88	5.97	2.797E-03	.1303	3.464E-03	.1614	3.530E-03	.1645	2.614E-03
>	5151(176)	6.88	5.97	2.797E-03	.1303	3.464E-03	.1614	3.530E-03	.1645	2.614E-03
I	3527(176)	7.96	7.05	2.575E-03	.1200	3.189E-03	.1486	3.249E-03	.1514	2.406E-03
>	5152(176)	7.96	7.05	2.575E-03	.1200	3.189E-03	.1486	3.249E-03	.1514	2.406E-03
I	3528(176)	9.01	8.10	2.402E-03	.1119	2.975E-03	.1386	3.031E-03	.1412	2.245E-03
>	5153(176)	9.01	8.10	2.402E-03	.1119	2.975E-03	.1386	3.031E-03	.1412	2.245E-03
I	3529(176)	10.09	9.17	2.257E-03	.1051	2.795E-03	.1302	2.846E-03	.1327	2.109E-03
>	5154(176)	10.09	9.17	2.257E-03	.1051	2.795E-03	.1302	2.846E-03	.1327	2.109E-03
I	3530(176)	11.16	10.25	2.135E-03	.0995	2.644E-03	.1232	2.694E-03	.1255	1.995E-03
>	5155(176)	11.16	10.25	2.135E-03	.0995	2.644E-03	.1232	2.694E-03	.1255	1.995E-03
I	3531(176)	12.24	11.33	2.031E-03	.0946	2.515E-03	.1172	2.563E-03	.1194	1.898E-03
>	5156(176)	12.24	11.33	2.031E-03	.0946	2.515E-03	.1172	2.563E-03	.1194	1.898E-03

GRCHF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE F/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	REQ
91	11	TRIP				>	.110	.039	8.350E 05	5.737E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTON	ALPHA-PREBEND	ROLL-MODEL	YAW
7.97	375.5	1286	19.97	10.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SIREF (H= .040 FT)
93.8	.039	1.742	3782	3.535E-05	7.552E-08	1.765E 06	2.146E-02	2.028E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HREAREA)	TRAR(TO)	BETA(TO)
10F(T)	400					
3ICE(S)	391	175	85	.0573	1.215E-01	1.1928E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.5 TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	3532(175)	13.29	12.38	1.943E-03	.0905	2.40[illegible]E-03	.1121	2.452E-03	.1142	1.816E-03
>	5197(175)	13.29	12.38	1.943E-03	.0905	2.406E-03	.1121	2.452E-03	.1142	1.816E-03
1	3533(175)	14.37	13.46	1.863E-03	.0868	2.308E-03	.1075	2.351E-03	.1096	1.741E-03
>	5198(175)	14.37	13.46	1.863E-03	.0868	2.308E-03	.1075	2.351E-03	.1096	1.741E-03
1	3534(175)	15.47	14.56	1.741E-03	.0835	2.219E-03	.1034	2.261E-03	.1053	1.674E-03
>	5199(175)	15.47	14.56	1.741E-03	.0835	2.219E-03	.1034	2.261E-03	.1053	1.674E-03
1	3535(175)	16.52	15.61	1.730E-03	.0806	2.143E-03	.0998	2.183E-03	.1017	1.617E-03
>	5200(175)	16.52	15.61	1.730E-03	.0806	2.143E-03	.0998	2.183E-03	.1017	1.617E-03
		17.37		MODEL AS LEFT CENTERLINE						
>	5201(175)	17.66	16.68	1.673E-03	.0780	2.072E-03	.0966	2.112E-03	.0984	1.[illegible]34E-03
1	3536(175)	17.62	16.71	1.672E-03	.0779	2.071E-03	.0965	2.110E-03	.0983	1.563E-03
1	3537(175)	18.67	17.76	1.622E-03	.0756	2.009E-03	.0936	2.047E-03	.0954	1.516E-03
>	5202(175)	18.67	17.74	1.622E-03	.0756	2.009E-03	.0936	2.047E-03	.0954	1.[illegible]16E-03
1	3538(175)	19.75	18.83	1.575E-03	.0734	1.950E-03	.0909	1.987E-03	.0926	1.472E-03
>	5203(175)	19.75	18.83	1.575E-03	.0734	1.950E-03	.0909	1.987E-03	.0926	1.472E-03

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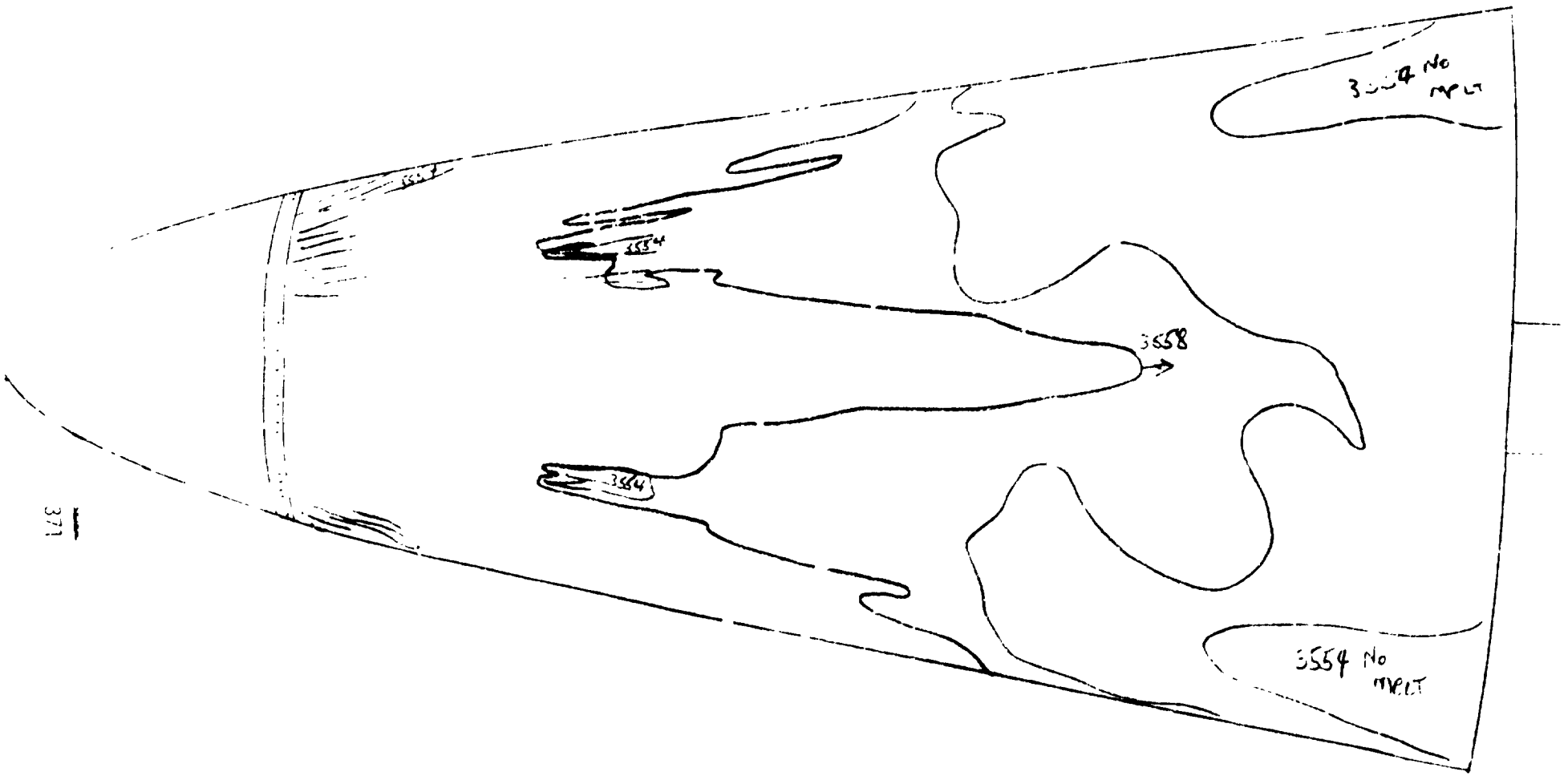

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V41H-82A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
92	11	TRIP				5	.110	.039	0.323E 05	5.718E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	375.7	1289	19.96	10.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.0	.039	1.753	3787	3.51RE-05	7.572E-08	1.760E 06	2.14RE-02	2.031E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACRK)	THAR(TO)	HETA(TO)
10F(T)	400					
>ICE(S)	391	250	81	.0617	-.260E-01	2.4510E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3540(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
>	5205(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	3541(250)	1.58		MODEL HAS NOT REACHED CENTERLINE						
>	5206(250)	1.58		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.61								
I	3542(250)	2.65	1.74	1.147E-02	.5338	1.456E-02	.6778	1.487E-02	.6925	1.068E-02
>	5207(250)	2.65	1.74	1.147E-02	.5338	1.456E-02	.6778	1.487E-02	.6925	1.068E-02
I	3543(250)	3.70	2.79	9.052E-03	.4215	1.149E-02	.5351	1.174E-02	.5467	8.431E-03
>	5208(250)	3.70	2.79	9.052E-03	.4215	1.149E-02	.5351	1.174E-02	.5467	8.431E-03
>6		3.93								
I	3544(250)	4.78	3.87	7.690E-03	.3581	9.764E-03	.4546	9.976E-03	.4645	7.162E-03
>	5209(250)	4.78	3.87	7.690E-03	.3581	9.764E-03	.4546	9.976E-03	.4645	7.162E-03
I	3545(250)	5.86	4.94	6.802E-03	.3167	8.636E-03	.4021	8.823E-03	.4108	6.335E-03
>	5210(250)	5.86	4.94	6.802E-03	.3167	8.636E-03	.4021	8.823E-03	.4108	6.335E-03
I	3546(250)	6.93	5.02	6.104E-03	.2870	7.826E-03	.3644	7.996E-03	.3723	5.741E-03
>	5211(250)	6.93	5.02	6.104E-03	.2870	7.826E-03	.3644	7.996E-03	.3723	5.741E-03
I	3547(250)	7.58	7.07	5.687E-03	.2648	7.221E-03	.3362	7.377E-03	.3435	5.297E-03
>	5212(250)	7.58	7.07	5.687E-03	.2648	7.221E-03	.3362	7.377E-03	.3435	5.297E-03
I	3548(250)	8.06	8.15	5.298E-03	.2467	6.727E-03	.3132	6.873E-03	.3200	4.935E-03
>	5213(250)	8.06	8.15	5.298E-03	.2467	6.727E-03	.3132	6.873E-03	.3200	4.935E-03
I	3549(250)	10.14	9.22	4.980E-03	.2318	6.322E-03	.2944	6.459E-03	.3008	4.638E-03
>	5214(250)	10.14	9.22	4.980E-03	.2318	6.322E-03	.2944	6.459E-03	.3008	4.638E-03
I	3550(250)	11.21	10.31	4.712E-03	.2194	5.983E-03	.2786	6.113E-03	.2846	4.389E-03
>	5215(250)	11.21	10.31	4.712E-03	.2194	5.983E-03	.2786	6.113E-03	.2846	4.389E-03
I	3551(250)	12.29	11.38	4.484E-03	.2088	5.693E-03	.2651	5.816E-03	.2708	4.176E-03
>	5216(250)	12.29	11.38	4.484E-03	.2088	5.693E-03	.2651	5.816E-03	.2708	4.176E-03

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V41H-R24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP C 16 *** MODEL DESCRIPTION ***

	GAP LOCATION/SIZE			TRIP LOCATION/SIZE			RER	RED
52 TRIP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
				5	.110	.2[illegible]0	8.323E 05	5.710E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	POLL-MODEL	YAW
7.97	375.7	1289	19.96	10.06	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	STREF (HR .040 FT)
94.0	.035	1.753	3787	3.51E-05	7.572E-08	1.760E 06	2.14E-02	2.031E-02

CAPPA	POLL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCAR)	TBAR(TO)	BETA(TO)
10F(T)	400					
5IDF(S)	391	250	81	.0617	2.260E-01	2.6510E-01
6G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	355(250)	14.37	12.45	4.208E-03	.1995	5.441E-03	.2533	5.554E-03	.2588	3.991E-03
5	521(250)	13.37	12.45	4.208E-03	.1995	5.441E-03	.2533	5.554E-03	.2588	3.991E-03
1	356(250)	14.41	12.5	4.115E-03	.1916	5.225E-03	.2433	5.334E-03	.2486	3.833E-03
5	521(250)	14.42	13.50	4.115E-03	.1916	5.225E-03	.2433	5.334E-03	.2486	3.833E-03
1	356(250)	15.09	14.54	3.941E-03	.1846	5.029E-03	.2341	5.[illegible]3E-03	.2392	3.689E-03
5	521(250)	15.09	14.54	3.941E-03	.1846	5.029E-03	.2341	5.134E-03	.2392	3.689E-03
1	355(250)	16.57	15.64	3.822E-03	.1780	4.853E-03	.2259	4.954E-03	.2308	3.560E-03
5	522(250)	16.57	15.64	3.822E-03	.1780	4.853E-03	.2259	4.954E-03	.2308	3.560E-03
1	356(250)	17.65	16.73	3.697E-03	.1721	4.694E-03	.2186	4.794E-03	.2233	3.443E-03
5	522(250)	17.65	16.73	3.697E-03	.1721	4.694E-03	.2186	4.794E-03	.2233	3.443E-03
1	357(250)	18.70	17.78	3.508E-03	.1670	4.553E-03	.2120	4.652E-03	.2166	3.340E-03
5	522(250)	18.70	17.78	3.508E-03	.1670	4.553E-03	.2120	4.652E-03	.2166	3.340E-03
1	358(250)	19.77	18.84	3.428E-03	.1621	4.421E-03	.2059	4.517E-03	.2103	3.243E-03
5	522(250)	19.77	18.84	3.428E-03	.1621	4.421E-03	.2059	4.517E-03	.2103	3.243E-03
1	359(250)	20.85	19.94	3.307E-03	.1577	4.300E-03	.2002	4.394E-03	.2046	3.155E-03
5	522(250)	20.85	19.94	3.307E-03	.1577	4.300E-03	.2002	4.394E-03	.2046	3.155E-03
1	360(250)	21.93	21.01	3.249E-03	.1536	4.189E-03	.1950	4.280E-03	.1993	3.073E-03
5	522(250)	21.93	21.01	3.249E-03	.1536	4.189E-03	.1950	4.280E-03	.1993	3.073E-03
		23.00		MODEL HAS LEFT CENTERLINE						
1	361(250)	23.00	22.09	3.218E-03	.1498	4.085E-03	.1902	4.174E-03	.1943	2.997E-03
5	522(250)	23.00	22.09	3.218E-03	.1498	4.085E-03	.1902	4.174E-03	.1943	2.997E-03
1	362(250)	24.05	23.14	3.144E-03	.1464	3.992E-03	.1858	4.078E-03	.1899	2.928E-03
5	522(250)	24.05	23.14	3.144E-03	.1464	3.992E-03	.1858	4.078E-03	.1899	2.928E-03
1	363(250)	25.13	24.22	3.073E-03	.1431	3.902E-03	.1817	3.986E-03	.1856	2.862E-03
5	522(250)	25.13	24.22	3.073E-03	.1431	3.902E-03	.1817	3.986E-03	.1856	2.862E-03

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V61R-R28

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP CONFIG *** MODEL DESCRIPTION ***

57 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	HED
			S	.110	.039	8.323E 05	5.710E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.97	375.7	1289	19.96	10.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
94.0	.039	1.752	3787	3.51RE-05	7.572E-08	1.760E 06	2.14RE-02	2.031E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	RETA(TO)
SIDE(S) 56	.00 291	250	R1	.0617	2.260E-01	2.4510E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.3TO)	H(.3TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	356*(256)	26.21	25.29	3.007E-[illegible]	.1400	3.81RE-03	.177R	3.901E-03	.1R16	2.801E-03
2	5224(256)	26.21	25.29	3.007E-[illegible]	.1400	3.81RE-03	.177R	3.901E-03	.1R16	2.801E-03

.00

Ge 93

425 PSIA
840°F

T_{PR} = 300°F

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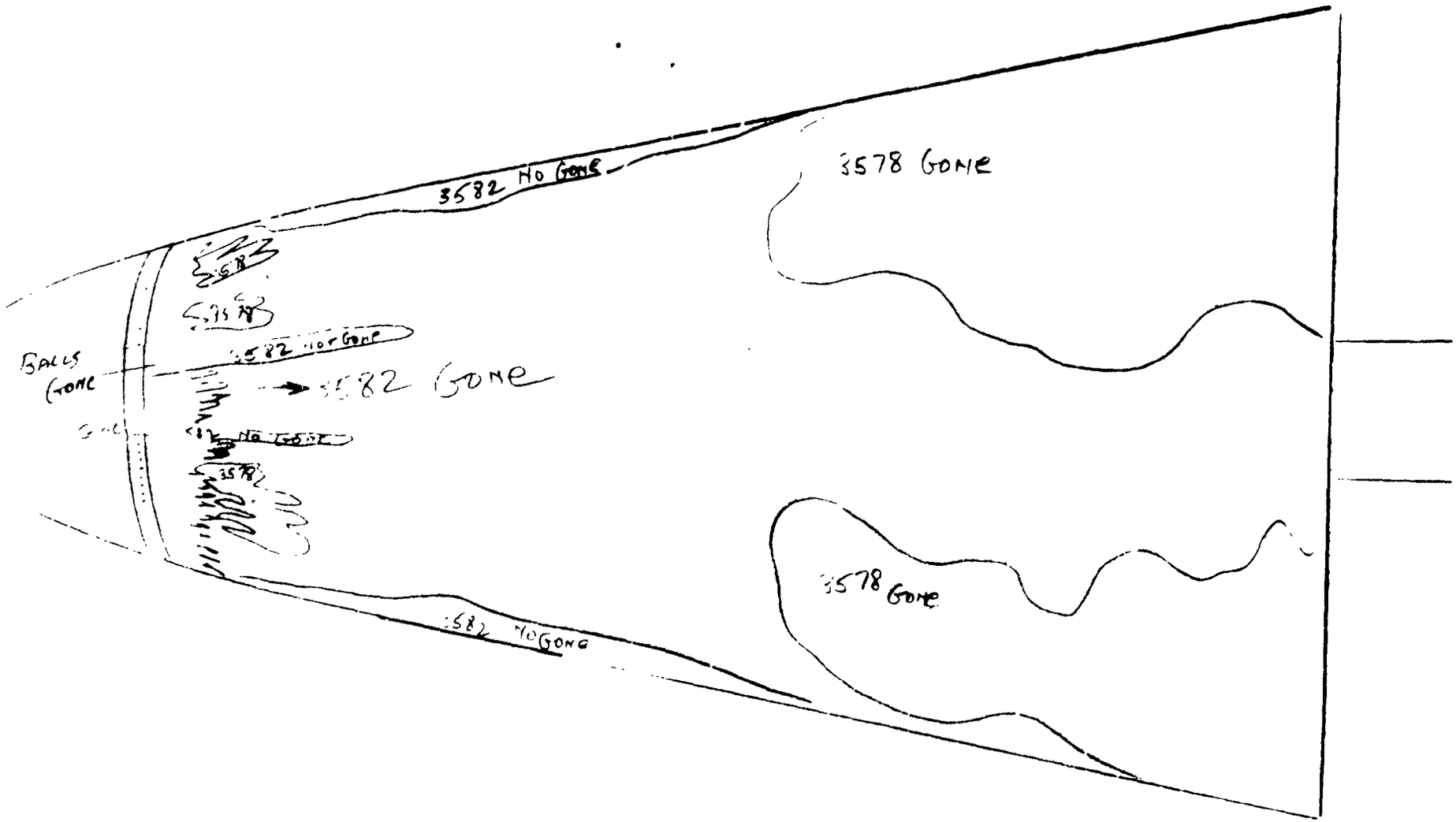

NASA-RI OH 54

V41A-H2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
93	11	TRIP				5	.110	.039	9.411E 05	6.467E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	426.3	1289	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
93.8	.044	1.975	3788	1.984E-05	7.555E-08	1.990E 06	2.282E-02	1.912E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HHCACRA)	TRAR(TO)	BETA(TO)
10F(1)	400					
51LF(5)	391	300	81	.0636	2.928E-01	3.4112E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3566(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
5	5231(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
1	3567(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
5	5232(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
1	3568(300)	2.63	1.70	1.664E-02	.7292	2.160E-02	.9465	2.082E-02	.9126	1.370E-02
5	5233(300)	2.63	1.70	1.664E-02	.7292	2.160E-02	.9465	2.082E-02	.9126	1.370E-02
1	3569(300)	3.70	2.78	1.302E-02	.5706	1.690E-02	.7407	1.630E-02	.7142	1.072E-02
5	5234(300)	3.70	2.78	1.302E-02	.5706	1.690E-02	.7407	1.630E-02	.7142	1.072E-02
5G		3.93								
1	3570(300)	4.78	3.86	1.105E-02	.4846	1.435E-02	.6288	1.383E-02	.6063	9.099E-03
5	5235(300)	4.78	3.86	1.105E-02	.4846	1.435E-02	.6288	1.383E-02	.6063	9.099E-03
1	3571(300)	5.86	4.93	9.772E-03	.4283	1.268E-02	.5560	1.223E-02	.5361	8.044E-03
5	5236(300)	5.86	4.93	9.772E-03	.4283	1.268E-02	.5560	1.223E-02	.5361	8.044E-03
1	3572(300)	6.91	5.98	8.871E-03	.3888	1.152E-02	.5047	1.110E-02	.4867	7.303E-03
5	5237(300)	6.91	5.98	8.871E-03	.3888	1.152E-02	.5047	1.110E-02	.4867	7.303E-03
1	3573(300)	7.98	7.06	8.167E-03	.3580	1.060E-02	.4647	1.022E-02	.4480	6.723E-03
5	5238(300)	7.98	7.06	8.167E-03	.3580	1.060E-02	.4647	1.022E-02	.4480	6.723E-03
1	3574(300)	9.06	8.13	7.607E-03	.3334	9.875E-03	.4328	9.522E-03	.4173	6.263E-03
5	5239(300)	9.06	8.13	7.607E-03	.3334	9.875E-03	.4328	9.522E-03	.4173	6.263E-03
1	3575(300)	10.14	9.21	7.149E-03	.3133	9.280E-03	.4067	8.948E-03	.3922	5.885E-03
5	5240(300)	10.14	9.21	7.149E-03	.3133	9.280E-03	.4067	8.948E-03	.3922	5.885E-03
1	3576(300)	11.19	10.24	6.773E-03	.2969	8.792E-03	.3854	8.477E-03	.3716	5.576E-03
5	5241(300)	11.19	10.24	6.773E-03	.2969	8.792E-03	.3854	8.477E-03	.3716	5.576E-03
1	3577(300)	12.29	11.34	6.436E-03	.2821	8.355E-03	.3662	8.056E-03	.3531	5.299E-03
5	5242(300)	12.29	11.34	6.436E-03	.2821	8.355E-03	.3662	8.056E-03	.3531	5.299E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE R/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	R/L	DIA.	RER	RED
53	11	TRIP				S	.110	.039	9.411E 05	6.467E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	426.3	1289	29.99	.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	STREF (HR .040 FT)
93.8	.044	1.979	3788	3.969E-05	7.555E-08	1.590E 06	2.282E-02	1.912E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	BETA(TO)
IOF(I)	.00					
>ICE(S)	291	300	81	.0636	2.928E-01	3.4112E-01
>6						

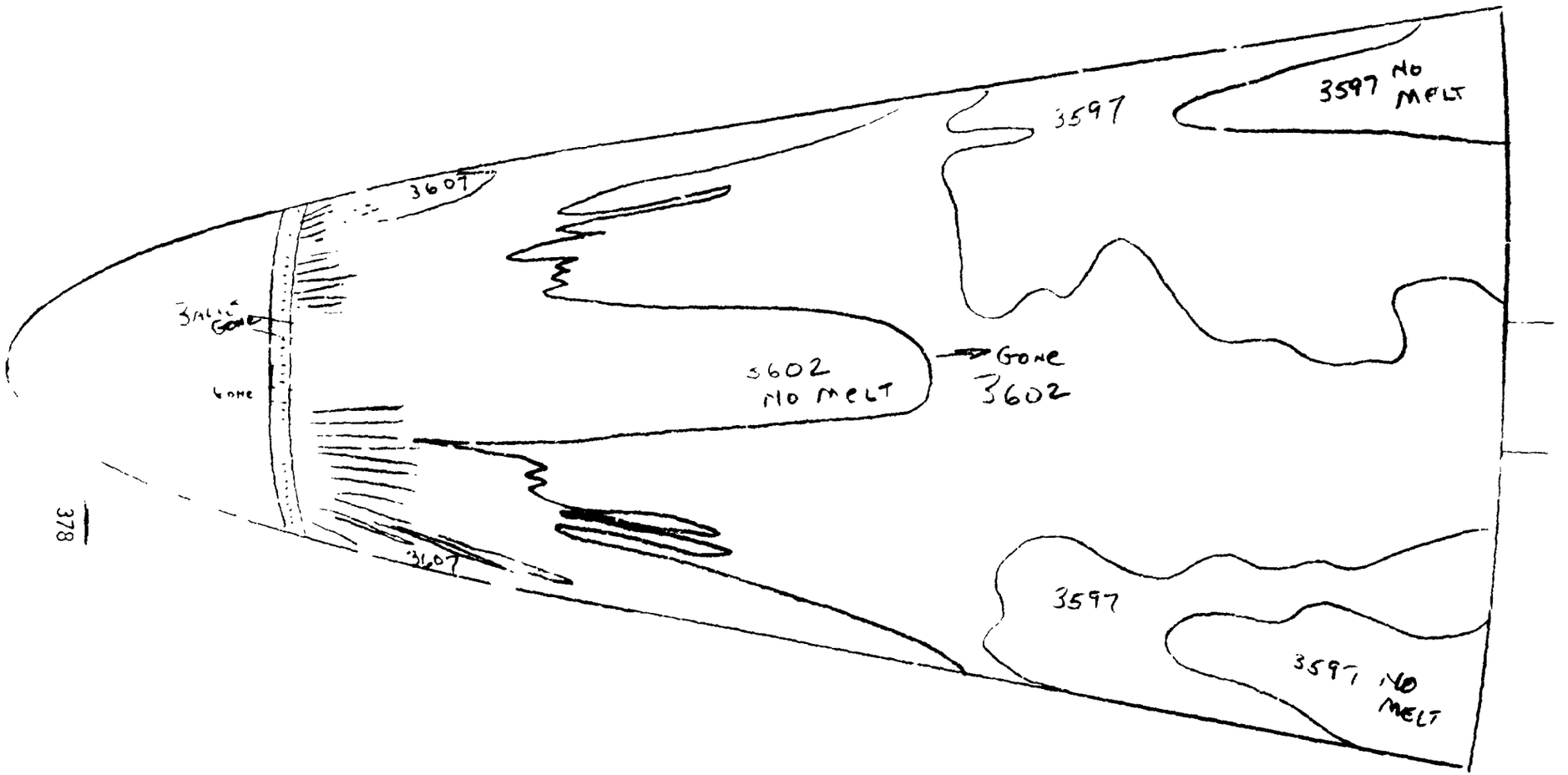
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	357H(300)	13.34	12.41	6.158E-03	.2699	7.993E-03	.3503	7.707E-03	.3378	5.069E-03
>	5243(300)	13.37	12.44	6.152E-03	.2696	7.985E-03	.3500	7.694E-03	.3375	5.064E-03
I	357J(300)	14.42	13.45	5.907E-03	.2588	7.668E-03	.3361	7.393E-03	.3241	4.863E-03
>	5244(300)	14.42	13.45	5.907E-03	.2588	7.668E-03	.3361	7.393E-03	.3241	4.863E-03
I	35H0(300)	15.49	14.57	5.685E-03	.2491	7.379E-03	.3234	7.115E-03	.3119	4.680E-03
>	5245(300)	15.49	14.57	5.685E-03	.2491	7.379E-03	.3234	7.115E-03	.3119	4.680E-03
		15.57		MODEL HAS LEFT CENTERLINE						
I	35H1(300)	16.57	15.64	5.486E-03	.2404	7.121E-03	.3121	6.866E-03	.3009	4.516E-03
>	5246(300)	16.57	15.64	5.486E-03	.2404	7.121E-03	.3121	6.866E-03	.3009	4.516E-03
I	35H2(300)	17.65	16.72	5.306E-03	.2326	6.888E-03	.3019	6.641E-03	.2911	4.368E-03
>	5247(300)	17.65	16.72	5.306E-03	.2326	6.888E-03	.3019	6.641E-03	.2911	4.368E-03
I	35H3(300)	18.72	17.79	5.143E-03	.2254	6.676E-03	.2926	6.437E-03	.2821	4.234E-03
>	5248(300)	18.72	17.79	5.143E-03	.2254	6.676E-03	.2926	6.437E-03	.2821	4.234E-03
I	35H4(300)	19.80	18.87	4.974E-03	.2189	6.483E-03	.2842	6.251E-03	.2740	4.112E-03
>	5249(300)	19.80	18.87	4.974E-03	.2189	6.483E-03	.2842	6.251E-03	.2740	4.112E-03

400
GP94

$\alpha = 2L'$ 3589℄

425 PSIA $\alpha = 20°$

840°F $T_R = 250°F$



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RN X	RED
04	21	TRIP				5	.110	.039	9.398E 05	6.452E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREVEND	ROLL-MODEL	YAW
7.98	425.6	1289	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SREF (R= .040 FT)
93.5	.044	1.975	3789	3.960E-05	7.558E-08	1.585E 06	2.280E-02	1.914E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAX)	TFAR(TO)	BETA(TO)
(OF(T)	390					
>ICE(S)	391	250	85	.0617	2.216E-01	2.3932E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
	3586(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
>	5251(250)	.50		MODEL HAS NOT REACHED CENTERLINE						
	3587(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5252(250)	1.55		MODEL HAS NOT REACHED CENTERLINE						
(SECT TIME =		1.69								
	3588(250)	2.60	1.69	1.136E-02	.4983	1.443E-02	.6328	1.474E-02	.6464	9.394E-03
>	5253(250)	2.60	1.69	1.136E-02	.4983	1.443E-02	.6328	1.474E-02	.6464	9.394E-03
	3589(250)	3.63	2.77	8.879E-03	.3895	1.128E-02	.4946	1.152E-02	.5052	7.342E-03
>	5254(250)	3.63	2.77	8.879E-03	.3895	1.128E-02	.4946	1.152E-02	.5052	7.342E-03
>G		3.93								
	3590(250)	4.76	3.86	7.533E-03	.3304	9.567E-03	.4196	9.772E-03	.4286	6.230E-03
>	5255(250)	4.76	3.86	7.533E-03	.3304	9.567E-03	.4196	9.772E-03	.4286	6.230E-03
	3591(250)	5.81	4.85	6.675E-03	.2928	8.477E-03	.3718	8.659E-03	.3798	5.520E-03
>	5256(250)	5.81	4.85	6.675E-03	.2928	8.477E-03	.3718	8.659E-03	.3798	5.520E-03
	3592(250)	6.88	5.97	6.044E-03	.2651	7.675E-03	.3367	7.840E-03	.3439	4.998E-03
>	5257(250)	6.88	5.97	6.044E-03	.2651	7.675E-03	.3367	7.840E-03	.3439	4.998E-03
	3593(250)	7.96	7.05	5.563E-03	.2440	7.065E-03	.3099	7.216E-03	.3165	4.600E-03
>	5258(250)	7.96	7.05	5.563E-03	.2440	7.065E-03	.3099	7.216E-03	.3165	4.600E-03
	3594(250)	9.04	8.12	5.181E-03	.2273	6.580E-03	.2886	6.721E-03	.2948	4.285E-03
>	5259(250)	9.04	8.12	5.181E-03	.2273	6.580E-03	.2886	6.721E-03	.2948	4.285E-03
	3595(250)	10.11	9.20	4.869E-03	.2136	6.183E-03	.2712	6.316E-03	.2770	4.026E-03
>	5260(250)	10.11	9.20	4.869E-03	.2136	6.183E-03	.2712	6.316E-03	.2770	4.026E-03
	3596(250)	11.19	10.27	4.620E-03	.2021	5.850E-03	.2566	5.976E-03	.2621	3.810E-03
>	5261(250)	11.19	10.27	4.620E-03	.2021	5.850E-03	.2566	5.976E-03	.2621	3.810E-03
	3597(250)	12.28	11.35	4.383E-03	.1922	5.566E-03	.2441	5.685E-03	.2494	3.624E-03
>	5262(250)	12.28	11.35	4.383E-03	.1922	5.566E-03	.2441	5.685E-03	.2494	3.624E-03

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V41A-H26

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
96	11	TRIP				S	.110	.039	9.390E 05	6.452E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.6	1289	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	STREF
93.4	.044	1.475	3789	3.960E-05	7.55HE-08	1.985E 06	(R= .040 FT) 2.280E-02	(R= .040 FT) 1.914E-02

CAMERA (OF(T)	ROLL NO	PAIR) TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TBAR(TO)	HETA(TO)
>ICE(S)	400					
>G	391	250	85	.8617	2.216E-01	2.3932E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	359H(250)	13.32	12.48	4.193E-03	.1839	5.325E-03	.2336	5.434E-03	.2386	3.467E-03
>	5263(250)	13.32	12.48	4.193E-03	.1839	5.325E-03	.2336	5.434E-03	.2386	3.467E-03
I	359H(250)	14.39	13.48	4.022E-03	.1764	5.108E-03	.2240	5.217E-03	.2289	3.326E-03
>	5264(250)	14.39	13.48	4.022E-03	.1764	5.108E-03	.2240	5.217E-03	.2289	3.326E-03
I	360(250)	15.47	14.55	3.871E-03	.1698	4.915E-03	.2156	5.021E-03	.2202	3.201E-03
>	5265(250)	15.47	14.55	3.871E-03	.1698	4.915E-03	.2156	5.021E-03	.2202	3.201E-03
I	360(250)	16.54	15.63	3.735E-03	.1638	4.743E-03	.2080	4.845E-03	.2125	3.089E-03
>	5266(250)	16.54	15.63	3.735E-03	.1638	4.743E-03	.2080	4.845E-03	.2125	3.089E-03
I	360(250)	17.62	16.71	3.613E-03	.1585	4.588E-03	.2012	4.686E-03	.2056	2.988E-03
>	5267(250)	17.62	16.71	3.613E-03	.1585	4.588E-03	.2012	4.686E-03	.2056	2.988E-03
I	360(250)	18.70	17.78	3.502E-03	.1536	4.447E-03	.1951	4.542E-03	.1992	2.896E-03
>	5268(250)	18.70	17.78	3.502E-03	.1536	4.447E-03	.1951	4.542E-03	.1992	2.896E-03
I	360(250)	19.77	18.86	3.400E-03	.1491	4.318E-03	.1894	4.411E-03	.1935	2.812E-03
>	5269(250)	19.77	18.86	3.400E-03	.1491	4.318E-03	.1894	4.411E-03	.1935	2.812E-03
I	360(250)	20.82	19.91	3.309E-03	.1452	4.203E-03	.1843	4.293E-03	.1883	2.737E-03
>	5270(250)	20.82	19.91	3.309E-03	.1452	4.203E-03	.1843	4.293E-03	.1883	2.737E-03
I	360(250)	21.90	20.99	3.223E-03	.1414	4.093E-03	.1795	4.181E-03	.1834	2.666E-03
>	5271(250)	21.90	20.99	3.223E-03	.1414	4.093E-03	.1795	4.181E-03	.1834	2.665E-03
I	360(250)	22.98	22.06	3.146E-03	.1379	3.992E-03	.1751	4.074E-03	.1789	2.600E-03
>	5272(250)	22.98	22.06	3.146E-03	.1379	3.992E-03	.1751	4.074E-03	.1789	2.600E-03
		23.50		MODEL HAS LEFT CENTERLINE						
I	360(250)	24.05	23.14	3.070E-03	.1346	3.898E-03	.1710	3.982E-03	.1747	2.539E-03
>	5273(250)	24.05	23.14	3.070E-03	.1346	3.898E-03	.1710	3.982E-03	.1747	2.539E-03
I	360(250)	25.13	24.22	3.001E-03	.1316	3.811E-03	.1672	3.893E-03	.1707	2.481E-03
>	5274(250)	25.13	24.22	3.001E-03	.1316	3.811E-03	.1672	3.893E-03	.1707	2.481E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
94	11	TRIP				5	.110	.039	9.390E 05	6.452E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	425.6	1289	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.9	.044	1.975	3789	3.946E-05	7.558E-08	1.588E 06	2.280E-02	1.914E-02

CAPERA (OF(T) SIDE(S) SG	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TBAR(TO)	BETA(TO)
	.00					
	391	250	95	.0617	2.2 5E-01	2.3932E-01

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	341(250)	24.62	25.29	2.936E-03	.1288	3.729E 03	.1636	3.804E-03	.1671	2.428E-03
2	5275(250)	29.21	25.29	2.936E-03	.1288	3.729E-03	.1636	3.804E-03	.1671	2.429E-03

400

GP95

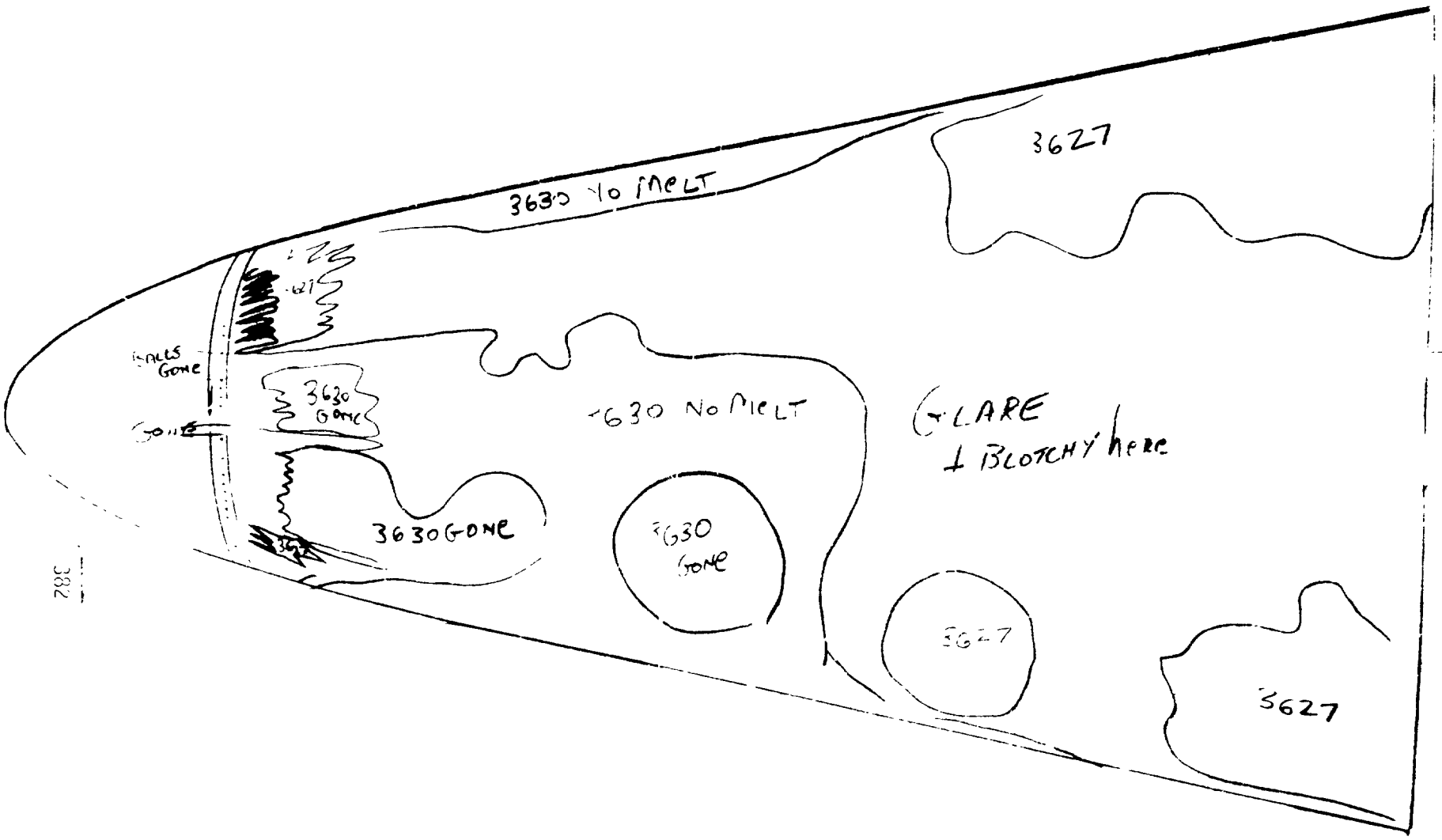
490 PSIA

850°F

$T_{PC} = 350°F$

$\alpha = 30°$

3615 ℄



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V41H-824

AEDC(ARO.INC.) ARNOLD AFS.TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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GROUP CONFIG *** MODEL DESCRIPTION ***

GS 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RE#	RED
			S	.110	.039	1.067E 06	7.334E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	490.6	1301	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (H= .040 FT)
94.7	.051	2.277	3496	4.523E-05	7.628E-06	2.257E 06	7.452E-02	1.793E-02

LAMBDA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAR(TO)	BETA(TO)
IOP(T)	400					
>ICE(S)	391	350	83	.0652	3.520E 01	4.3965E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
	MODEL HAS NOT REACHED CENTERLINE									
	MODEL HAS NOT REACHED CENTERLINE									
	MODEL HAS NOT REACHED CENTERLINE									
	MODEL HAS NOT REACHED CENTERLINE									
	3612(350)	.48								
>	5277(350)	.48								
	3613(350)	1.55								
>	5278(350)	1.55								
INJECT TIME =			1.65							
	3614(350)	2.63	1.74	2.198E-02	.4966	2.920E-02	1.1969	2.805E-02	1.1440	1.575E-02
>	5279(350)	2.63	1.74	2.198E-02	.4966	2.920E-02	1.1969	2.805E-02	1.1440	1.575E-02
	3615(350)	3.70	2.78	1.720E-02	.7017	2.285E-02	.9370	2.195E-02	.8953	1.233E-02
>	5280(350)	3.70	2.78	1.720E-02	.7017	2.285E-02	.9370	2.195E-02	.8953	1.233E-02
>G			3.93							
	3616(350)	4.76	3.83	1.465E-02	.5976	1.946E-02	.7938	1.869E-02	.7625	1.050E-02
>	5281(350)	4.76	3.83	1.465E-02	.5976	1.946E-02	.7938	1.869E-02	.7625	1.050E-02
	3617(350)	5.83	4.90	1.274E-02	.5280	1.719E-02	.7013	1.652E-02	.6737	9.274E-03
>	5282(350)	5.83	4.90	1.274E-02	.5280	1.719E-02	.7013	1.652E-02	.6737	9.274E-03
	3618(350)	6.91	5.98	1.172E-02	.4781	1.557E-02	.6351	1.496E-02	.6101	8.398E-03
>	5283(350)	6.91	5.98	1.172E-02	.4781	1.557E-02	.6351	1.496E-02	.6101	8.398E-03
	3619(350)	7.98	7.06	1.079E-02	.4402	1.433E-02	.5846	1.377E-02	.5616	7.732E-03
>	5284(350)	7.98	7.06	1.079E-02	.4402	1.433E-02	.5846	1.377E-02	.5616	7.732E-03
	3620(350)	9.06	8.13	1.005E-02	.4100	1.335E-02	.5446	1.282E-02	.5231	7.202E-03
>	5285(350)	9.06	8.13	1.005E-02	.4100	1.335E-02	.5446	1.282E-02	.5231	7.202E-03
	3621(350)	10.14	9.21	9.446E-03	.3853	1.255E-02	.5[illegible]	1.205E-02	.4916	6.768E-03
>	5286(350)	10.14	9.21	9.446E-03	.3853	1.255E-02	.5114	1.205E-02	.4916	6.768E-03
	3622(350)	11.19	10.26	8.969E-03	.3658	1.189E-02	.4849	1.142E-02	.4651	6.412E-03
>	5287(350)	11.19	10.26	8.969E-03	.3658	1.189E-02	.4849	1.142E-02	.4658	6.412E-03
	3623(350)	12.26	11.34	8.514E-03	.3473	1.131E-02	.4613	1.086E-02	.4431	6.100E-03
>	5288(350)	12.26	11.34	8.514E-03	.3473	1.131E-02	.4613	1.086E-02	.4431	6.100E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
75	11	TRIP				5	.110	.039	1.047E 06	7.334E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	490.6	1301	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (M= .040 FT)	STREF (M= .040 FT)
94.7	.051	2.277	3806	4.593E-05	7.628E-06	2.257E 06	2.452E-02	1.793E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACX)	TRAR(TO)	BETA(TO)
'OF(T)	400					
SIDE(S)	291	350	80	.0652	3.520E-01	4.3965E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
F	3626(350)	13.34	12.41	8.136E-03	.3319	1.081E-02	.4408	1.038E-02	.4235	5.829E-03
S	5295(350)	3.34	12.41	8.136E-03	.3319	1.081E-02	.4408	1.038E-02	.4235	5.829E-03
F	3627(350)	14.42	13.49	7.805E-03	.3184	1.037E-02	.4229	9.958E-03	.4062	5.592E-03
S	5296(350)	14.42	13.49	7.805E-03	.3184	1.037E-02	.4229	9.958E-03	.4062	5.592E-03
F	3628(350)	15.49	14.57	7.511E-03	.3064	9.976E-03	.4069	9.583E-03	.3909	5.382E-03
S	5297(350)	15.49	14.57	7.511E-03	.3064	9.976E-03	.4069	9.583E-03	.3909	5.382E-03
F	3629(350)	16.54	15.62	7.254E-03	.2959	9.635E-03	.3930	9.255E-03	.3775	5.197E-03
S	5298(350)	16.57	15.64	7.248E-03	.2957	9.627E-03	.3927	9.248E-03	.3772	5.193E-03
F	3630(350)	17.6[illegible]	16.69	7.0[illegible]E-03	.2862	9.319E-03	.3801	8.952E-03	.3652	5.027E-03
F	3631(350)	18.70	17.77	6.800E-03	.2774	9.032E-03	.3684	8.677E-03	.3539	4.872E-03
S	5299(350)	18.70	17.77	6.800E-03	.2774	9.032E-03	.3684	8.677E-03	.3539	4.872E-03
		19.07		MODEL GAS LEFT CENTERLINE						
F	3632(350)	19.77	18.85	6.603E-03	.2694	8.771E-03	.3578	8.425E-03	.3437	4.731E-03
S	5295(350)	19.77	18.85	6.603E-03	.2694	8.771E-03	.3578	8.425E-03	.3437	4.731E-03
F	3633(350)	20.85	19.92	6.422E-03	.2620	8.530E-03	.3480	8.194E-03	.3343	4.602E-03
S	5296(350)	20.85	19.92	6.422E-03	.2620	8.530E-03	.3480	8.194E-03	.3343	4.602E-03
F	3634(350)	21.93	21.00	6.256E-03	.2552	8.309E-03	.3391	7.982E-03	.3256	4.482E-03
S	5297(350)	21.93	21.00	6.256E-03	.2552	8.309E-03	.33[illegible]	7.982E-03	.3256	4.482E-03

40C

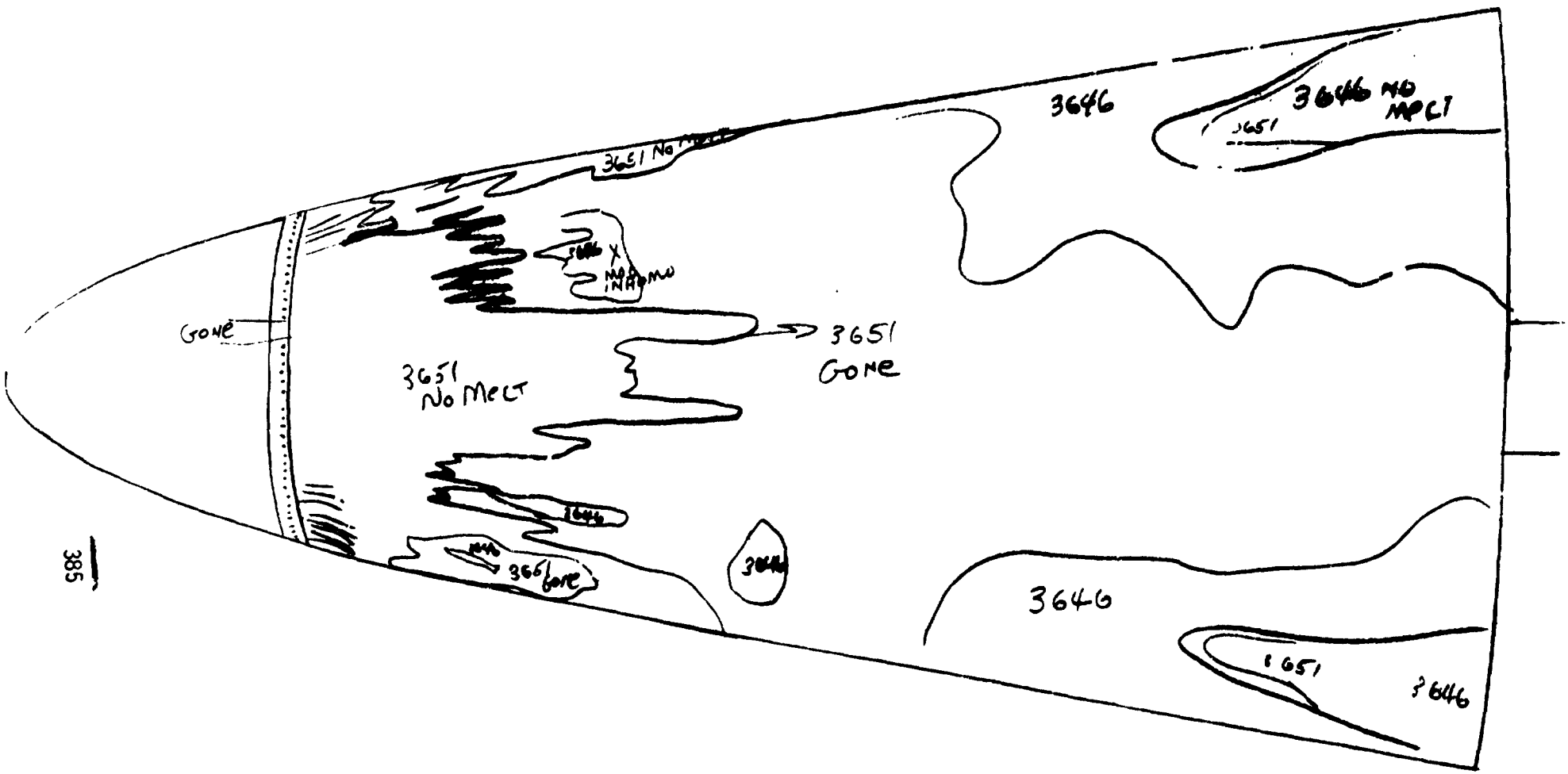
GP 96 $T_{Ax} = 275°F$

440 PSIA

850°F

$\alpha' = 20°$

3637 ℄



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V41R-424 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	REO
94	11	TRIP				5	.110	.039	1.065E 06	7.319E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTON	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	489.1	1301	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN= .040 FT)	SIREF (IN= .040 FT)
94.7	.051	2.27C	3805	4.512E-05	7.423E-08	2.252E 06	2.448E-02	1.795E-02

LAMFRA (DF(T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOAC/R)	TRAR(TO)	RETA(TO)
	400					
>ICE(S)	391	275	87	.0627	2.495E-01	2.7720E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.91C)	H(.91TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3634(275)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5299(275)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3635(275)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5300(275)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INFLECT TIME =		1.63								
I	3636(275)	2.60	1.69	1.337E-02	.5463	1.711E-02	.6990	1.749E-02	.7147	9.646E-03
>	5301(275)	2.60	1.69	1.337E-02	.5463	1.711E-02	.6990	1.749E-02	.7147	9.646E-03
I	3637(275)	3.68	2.77	1.045E-02	.4270	1.337E-02	.5463	1.367E-02	.5586	7.539E-03
>	5302(275)	3.68	2.77	1.045E-02	.4270	1.337E-02	.5463	1.367E-02	.5586	7.539E-03
>G		3.97								
I	3638(275)	4.76	3.84	8.867E-03	.3623	1.135E-02	.4635	1.160E-02	.4739	6.397E-03
>	5303(275)	4.76	3.84	8.867E-03	.3623	1.135E-02	.4635	1.160E-02	.4739	6.397E-03
I	3639(275)	5.83	4.92	7.837E-03	.3202	1.003E-02	.4097	1.025E-02	.4189	5.654E-03
>	5304(275)	5.83	4.92	7.837E-03	.3202	1.003E-02	.4097	1.025E-02	.4189	5.654E-03
I	3640(275)	6.91	5.99	7.099E-03	.2900	9.083E-03	.3711	9.287E-03	.3794	5.121E-03
>	5305(275)	6.91	5.99	7.099E-03	.2900	9.083E-03	.3711	9.287E-03	.3794	5.121E-03
I	3641(275)	7.96	7.05	6.588E-03	.2675	8.378E-03	.3423	8.566E-03	.3500	4.724E-03
>	5306(275)	7.96	7.05	6.588E-03	.2675	8.378E-03	.3423	8.566E-03	.3500	4.724E-03
I	3642(275)	9.04	8.12	6.099E-03	.2492	7.803E-03	.3188	7.978E-03	.3260	4.399E-03
>	5307(275)	9.04	8.12	6.099E-03	.2492	7.803E-03	.3188	7.978E-03	.3260	4.399E-03
I	3643(275)	10.11	9.20	5.731E-03	.2341	7.332E-03	.2996	7.497E-03	.3063	4.134E-03
>	5308(275)	10.11	9.20	5.731E-03	.2341	7.332E-03	.2996	7.497E-03	.3063	4.134E-03
I	3644(275)	11.16	10.25	5.429E-03	.2218	6.946E-03	.2838	7.102E-03	.2902	3.916E-03
>	5309(275)	11.16	10.25	5.429E-03	.2218	6.946E-03	.2838	7.102E-03	.2902	3.916E-03
I	3645(275)	12.24	11.33	5.165E-03	.2110	6.608E-03	.2700	6.756E-03	.2760	3.726E-03
>	5310(275)	12.24	11.33	5.165E-03	.2110	6.608E-03	.2700	6.756E-03	.2760	3.726E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REA	NED
54	11	TRIP				5	.110	.039	1.065E 06	7.319E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PRENEND	ROLL-MODEL	YAW
7.98	489.1	1381	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SIREF (W= .040 FT)
94.7	.051	2.270	3085	4.512E-05	7.623E-08	2.252E 06	2.448E-02	1.795E-02

CAPFSA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCARK)	TRAN(TO)	BETA(TO)
10F(1)	400					
>ICF(5)	391	275	87	.0027	2.495E-01	2.7720E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	3646(275)	13.32	12.46	4.935E-03	.2017	6.315E-03	.2580	6.456E-03	.2638	3.560E-03
>	5311(275)	13.32	12.46	4.935E-03	.2017	6.315E-03	.2580	6.456E-03	.2638	3.560E-03
1	3647(275)	14.39	13.68	4.734E-03	.1936	6.057E-03	.2475	6.193E-03	.2530	3.415E-03
>	5312(275)	14.39	13.68	4.734E-03	.1936	6.057E-03	.2475	6.193E-03	.2530	3.415E-03
1	3648(275)	15.44	14.53	4.560E-03	.1863	5.834E-03	.2384	5.965E-03	.2437	3.289E-03
>	5313(275)	15.44	14.53	4.560E-03	.1863	5.834E-03	.2384	5.965E-03	.2437	3.289E-03
1	3649(275)	16.52	15.61	4.400E-03	.1798	5.629E-03	.2300	5.756E-03	.2352	3.174E-03
>	5314(275)	16.52	15.61	4.400E-03	.1798	5.629E-03	.2300	5.756E-03	.2352	3.174E-03
1	3650(275)	17.60	16.68	4.255E-03	.1739	5.445E-03	.2225	5.567E-03	.2275	3.070E-03
>	5315(275)	17.60	16.68	4.255E-03	.1739	5.445E-03	.2225	5.567E-03	.2275	3.070E-03
1	3651(275)	18.67	17.74	4.124E-03	.1685	5.277E-03	.2156	5.396E-03	.2205	2.975E-03
>	5316(275)	18.67	17.74	4.124E-03	.1685	5.277E-03	.2156	5.396E-03	.2205	2.975E-03
1	3652(275)	19.75	18.83	4.005E-03	.1636	5.124E-03	.2094	5.239E-03	.2141	2.889E-03
>	5317(275)	19.75	18.83	4.005E-03	.1636	5.124E-03	.2094	5.239E-03	.2141	2.889E-03
		19.97		MODEL HAS LEFT CENTERLINE						
1	3653(275)	20.82	19.91	3.895E-03	.1591	4.984E-03	.2036	5.096E-03	.2082	2.810E-03
>	5318(275)	20.82	19.91	3.895E-03	.1591	4.984E-03	.2036	5.096E-03	.2082	2.810E-03
1	3654(275)	21.88	20.96	3.796E-03	.1551	4.857E-03	.1985	4.966E-03	.2029	2.739E-03
>	5319(275)	21.88	20.96	3.796E-03	.1551	4.857E-03	.1985	4.966E-03	.2029	2.739E-03
1	3655(275)	22.95	22.04	3.702E-03	.1513	4.737E-03	.1936	4.843E-03	.1979	2.671E-03
>	5320(275)	22.95	22.04	3.702E-03	.1513	4.737E-03	.1936	4.843E-03	.1979	2.671E-03

400

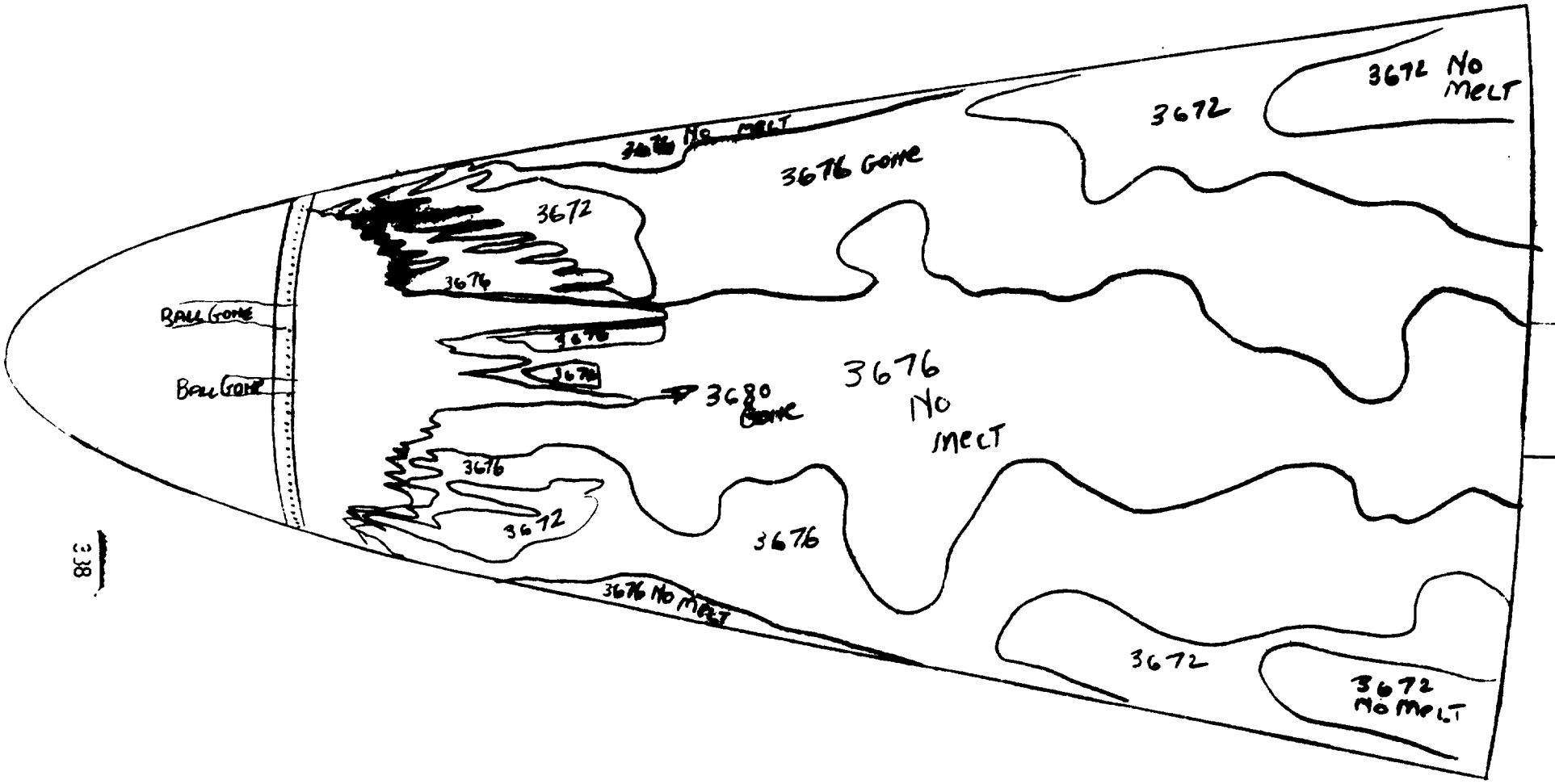
GP 97 T_{PC} = 300°F

555 PSIA

860°F

α = 20°

3660 ℄



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VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL A

#41H-82A

WRGUF CONF16 *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REN	RED
97	11	TRIP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
						S	.110	.039	1.194E 06	8.204E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.2	1310	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	WREF (W= .040 FT)	SIREF (W= .040 FT)
95.2	.057	2.567	3814	5.044E-05	7.602E-08	2.524E 04	2.406E-02	1.094E-02

CAPFFA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TRA(TO)	BETA(TO)
IOF(T)	400					
SICE(S)	391	300	86	.0636	2.800E-01	3.2161E-01
>G						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.9TO)	M(.9TO)/MREF	M(.8921TO)	M(.8921TO)/MREF	ST(TO)
I	3457(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5322(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3458(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	5323(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INFLECT TIME =			1.69							
I	3459(300)	2.58	1.64	1.585E-02	.6083	2.045E-02	.7847	2.093E-02	.8030	1.013E-02
>	5324(300)	2.60	1.60	1.574E-02	.6038	2.030E-02	.7788	2.077E-02	.7970	1.006E-02
I	3460(300)	3.65	2.74	1.235E-02	.4741	1.546E-02	.6116	1.631E-02	.6258	7.896E-03
>	5325(300)	3.65	2.74	1.235E-02	.4741	1.546E-02	.6116	1.631E-02	.6258	7.896E-03
>G			3.93							
I	3461(300)	4.73	3.82	1.047E-02	.4017	1.351E-02	.5182	1.382E-02	.5303	6.691E-03
>	5326(300)	4.73	3.82	1.047E-02	.4017	1.351E-02	.5182	1.382E-02	.5303	6.691E-03
I	3462(300)	5.81	4.86	9.247E-03	.3548	1.193E-02	.4577	1.221E-02	.4686	5.910E-03
>	5327(300)	5.81	4.86	9.247E-03	.3548	1.193E-02	.4577	1.221E-02	.4686	5.910E-03
I	3463(300)	6.86	5.94	8.389E-03	.3219	1.082E-02	.4153	1.107E-02	.4249	5.362E-03
>	5328(300)	6.86	5.94	8.389E-03	.3219	1.082E-02	.4153	1.107E-02	.4249	5.362E-03
I	3464(300)	7.93	7.02	7.720E-03	.2962	9.958E-03	.3821	1.014E-02	.3910	4.934E-03
>	5329(300)	7.93	7.02	7.720E-03	.2962	9.958E-03	.3821	1.014E-02	.3910	4.934E-03
I	3465(300)	9.01	8.10	7.188E-03	.2758	9.273E-03	.3558	9.484E-03	.3641	4.594E-03
>	5330(300)	9.01	8.10	7.188E-03	.2758	9.273E-03	.3558	9.484E-03	.3641	4.594E-03
I	3466(300)	10.09	9.17	6.753E-03	.2591	8.712E-03	.3343	8.915E-03	.3421	4.316E-03
>	5331(300)	10.09	9.17	6.753E-03	.2591	8.712E-03	.3343	8.915E-03	.3421	4.316E-03
I	3467(300)	11.16	10.25	6.389E-03	.2452	8.242E-03	.3162	8.434E-03	.3236	4.083E-03
>	5332(300)	11.16	10.25	6.389E-03	.2452	8.242E-03	.3162	8.434E-03	.3236	4.083E-03
I	3468(300)	12.24	11.33	6.078E-03	.2332	7.840E-03	.3008	8.023E-03	.3079	3.884E-03
>	5333(300)	12.24	11.33	6.078E-03	.2332	7.840E-03	.3008	8.023E-03	.3079	3.884E-03

NASA-NI OH 54 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-74 PAGE 2

V41H-A24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REB
57	11	TRIM				S	.110	.099	1.194E 06	0.204E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.99	856.2	1310	10.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HS .040 FT)	STREF (HS .040 FT)
95.2	.057	2.567	3819	5.044E-05	7.662E-08	2.524E 06	2.406E-02	1.694E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCAK)	TRAN(TO)	BETA(TO)
0	400					
SICE(S)	291	300	86	.0636	2.800E-01	3.2161E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	3669(300)	13.29	12.38	5.814E-03	.2231	7.500E-03	.2878	7.675E-03	.2945	3.716E-03
2	5334(300)	13.29	12.38	5.814E-03	.2231	7.500E-03	.2878	7.675E-03	.2945	3.716E-03
1	3670(300)	14.37	13.46	5.577E-03	.2140	7.194E-03	.2760	7.362E-03	.2825	3.564E-03
2	5335(300)	14.37	13.46	5.577E-03	.2140	7.194E-03	.2760	7.362E-03	.2825	3.564E-03
1	3671(300)	15.44	14.53	5.366E-03	.2059	6.922E-03	.2656	7.084E-03	.2718	3.429E-03
2	5336(300)	15.44	14.53	5.366E-03	.2059	6.922E-03	.2656	7.084E-03	.2718	3.429E-03
1	3672(300)	16.52	15.61	5.178E-03	.1987	6.679E-03	.2563	6.835E-03	.2623	3.309E-03
2	5337(300)	16.52	15.61	5.178E-03	.1987	6.679E-03	.2563	6.835E-03	.2623	3.309E-03
1	3673(300)	17.57	16.66	5.012E-03	.1923	6.465E-03	.2481	6.616E-03	.2539	3.203E-03
2	5338(300)	17.57	16.66	5.012E-03	.1923	6.465E-03	.2481	6.616E-03	.2539	3.203E-03
1	3674(300)	18.65	17.73	4.857E-03	.1864	6.266E-03	.2404	6.412E-03	.2460	3.104E-03
2	5339(300)	18.65	17.73	4.857E-03	.1864	6.266E-03	.2404	6.412E-03	.2460	3.104E-03
1	3675(300)	19.72	18.81	4.716E-03	.1810	6.084E-03	.2334	6.226E-03	.2389	3.014E-03
2	5340(300)	19.72	18.81	4.716E-03	.1810	6.084E-03	.2334	6.226E-03	.2389	3.014E-03
1	3676(300)	20.80	19.89	4.587E-03	.1760	5.917E-03	.2270	6.055E-03	.2323	2.931E-03
2	5341(300)	20.80	19.89	4.587E-03	.1760	5.917E-03	.2270	6.055E-03	.2323	2.931E-03
1	3677(300)	21.88	20.96	4.468E-03	.1714	5.763E-03	.2211	5.898E-03	.2263	2.855E-03
2	5342(300)	21.88	20.96	4.468E-03	.1714	5.763E-03	.2211	5.898E-03	.2263	2.855E-03
		21.98		MODEL WAS LEFT CENTERLINE						
1	3678(300)	22.93	22.01	4.360E-03	.1673	5.624E-03	.2158	5.755E-03	.2208	2.786E-03
2	5343(300)	22.93	22.01	4.360E-03	.1673	5.624E-03	.2158	5.755E-03	.2208	2.786E-03
1	3679(300)	24.00	23.09	4.257E-03	.1633	5.491E-03	.2107	5.619E-03	.2156	2.721E-03
2	5344(300)	24.00	23.09	4.257E-03	.1633	5.491E-03	.2107	5.619E-03	.2156	2.721E-03
1	3680(300)	25.08	24.17	4.161E-03	.1597	5.368E-03	.2060	5.493E-03	.2108	2.659E-03
2	5345(300)	25.08	24.17	4.161E-03	.1597	5.368E-03	.2060	5.493E-03	.2108	2.659E-03

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V41R-R2A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
57	11	TRIP				S	.110	.039	1.194E 06	0.204E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	554.2	1310	19.99	19.81	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR= .060 FT)	SIREF (HR= .060 FT)
95.2	.057	2.567	3819	5.044E-05	7.602E-06	2.524E 04	2.406E-02	1.096E-02

CAMERA (OF (T) SIDE(S) 56	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAGK)	TBAR(TO)	BETA(TO)
	400					
	391	300	86	.0036	2.800E-01	3.2161E-01

PIC NO	TIME DELTIME	H(IO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)

'400

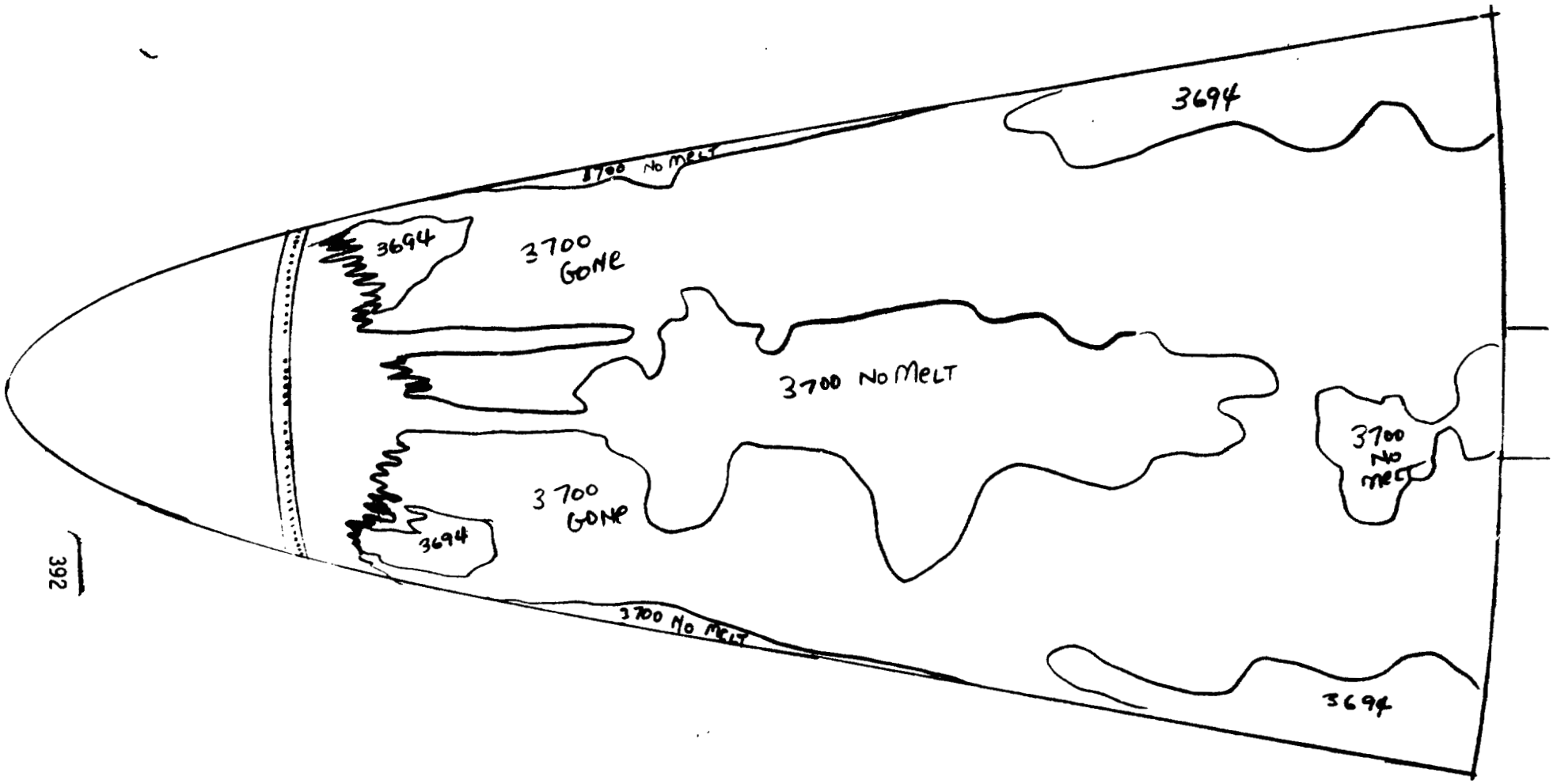
GP98 T_{PC}=300°F

610 PSIA

865°F

α=20°

3685 ℄



NASA-HI OH 56

V41A-02A

AEDC(APO.INC.) ARNOLD AFS.TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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RCUF CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REN	MED
99	11	TRIM	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
						S	.110	.039	1.307E 06	8.980E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	611.4	1314	19.97	10.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SIREF (W= .040 FT)
95.4	.63	2.821	3825	5.558E-05	7.683E-08	2.763E 06	2.734E-02	1.620E-02

CAMERA (OF(T) SICE(S)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAK)	TRAN(TO)	BETA(TO)
	400					
	391	300	97	.0694	2.777E-01	3.1817E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
*	3682(300)	.45		MODEL HAS NOT REACHED CENTERLINE						
>	5347(300)	.45		MODEL HAS NOT REACHED CENTERLINE						
*	3683(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	5348(300)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
*	3684(300)	2.60	1.69	1.557E-02	.5695	2.007E-02	.7341	2.053E-02	.7512	9.063E-03
>	5349(300)	2.60	1.69	1.557E-02	.5695	2.007E-02	.7341	2.053E-02	.7512	9.063E-03
*	3685(300)	3.65	2.74	1.222E-02	.4471	1.576E-02	.5764	1.612E-02	.5898	7.116E-03
>	5350(300)	3.68	2.77	1.217E-02	.4451	1.568E-02	.5738	1.605E-02	.5871	7.083E-03
56			3.90							
*	3686(300)	4.73	3.82	1.036E-02	.3789	1.335E-02	.4886	1.366E-02	.4998	6.030E-03
>	5351(300)	4.73	3.82	1.036E-02	.3789	1.335E-02	.4886	1.366E-02	.4998	6.030E-03
*	3687(300)	5.81	4.89	9.148E-03	.3346	1.179E-02	.4314	1.207E-02	.4414	5.325E-03
>	5352(300)	5.81	4.89	9.148E-03	.3346	1.179E-02	.4314	1.207E-02	.4414	5.325E-03
*	3688(300)	6.88	5.97	8.282E-03	.3030	1.068E-02	.3905	1.092E-02	.3996	4.822E-03
>	5353(300)	6.88	5.97	8.282E-03	.3030	1.068E-02	.3905	1.092E-02	.3996	4.822E-03
*	3689(300)	7.93	7.02	7.637E-03	.2794	9.846E-03	.3601	1.007E-02	.3685	4.446E-03
>	5354(300)	7.93	7.02	7.637E-03	.2794	9.846E-03	.3601	1.007E-02	.3685	4.446E-03
*	3690(300)	9.01	8.10	7.111E-03	.2602	9.167E-03	.3353	9.380E-03	.3431	4.140E-03
>	5355(300)	9.01	8.10	7.111E-03	.2602	9.167E-03	.3353	9.380E-03	.3431	4.140E-03
*	3691(300)	10.09	9.17	6.681E-03	.2444	8.612E-03	.3151	8.813E-03	.3224	3.890E-03
>	5356(300)	10.09	9.17	6.681E-03	.2444	8.612E-03	.3151	8.813E-03	.3224	3.890E-03
*	3692(300)	11.14	10.22	6.329E-03	.2315	8.157E-03	.2986	8.348E-03	.3054	3.684E-03
>	5357(300)	11.14	10.22	6.329E-03	.2315	8.157E-03	.2986	8.348E-03	.3054	3.684E-03
*	3693(300)	12.21	11.30	6.020E-03	.2202	7.759E-03	.2839	7.940E-03	.2905	3.504E-03
>	5358(300)	12.21	11.30	6.020E-03	.2202	7.759E-03	.2839	7.940E-03	.2905	3.504E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	MED
90	11	TRIP				5	.110	.039	1.307E 06	0.980E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SFCTCM	ALPHA-PREBEND	ROLL-MODEL	YAW
7.99	611.4	1316	19.97	18.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	SREF (R= .040 FT)
95.4	.063	2.821	3825	5.550E-05	7.693E-08	2.763E 06	2.734E-02	1.620E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAR(TO)	RETA(TO)
1OF(T)	400					
3ICE(S)	391	300	87	.0636	2.777E-01	3.1817E-01
56						

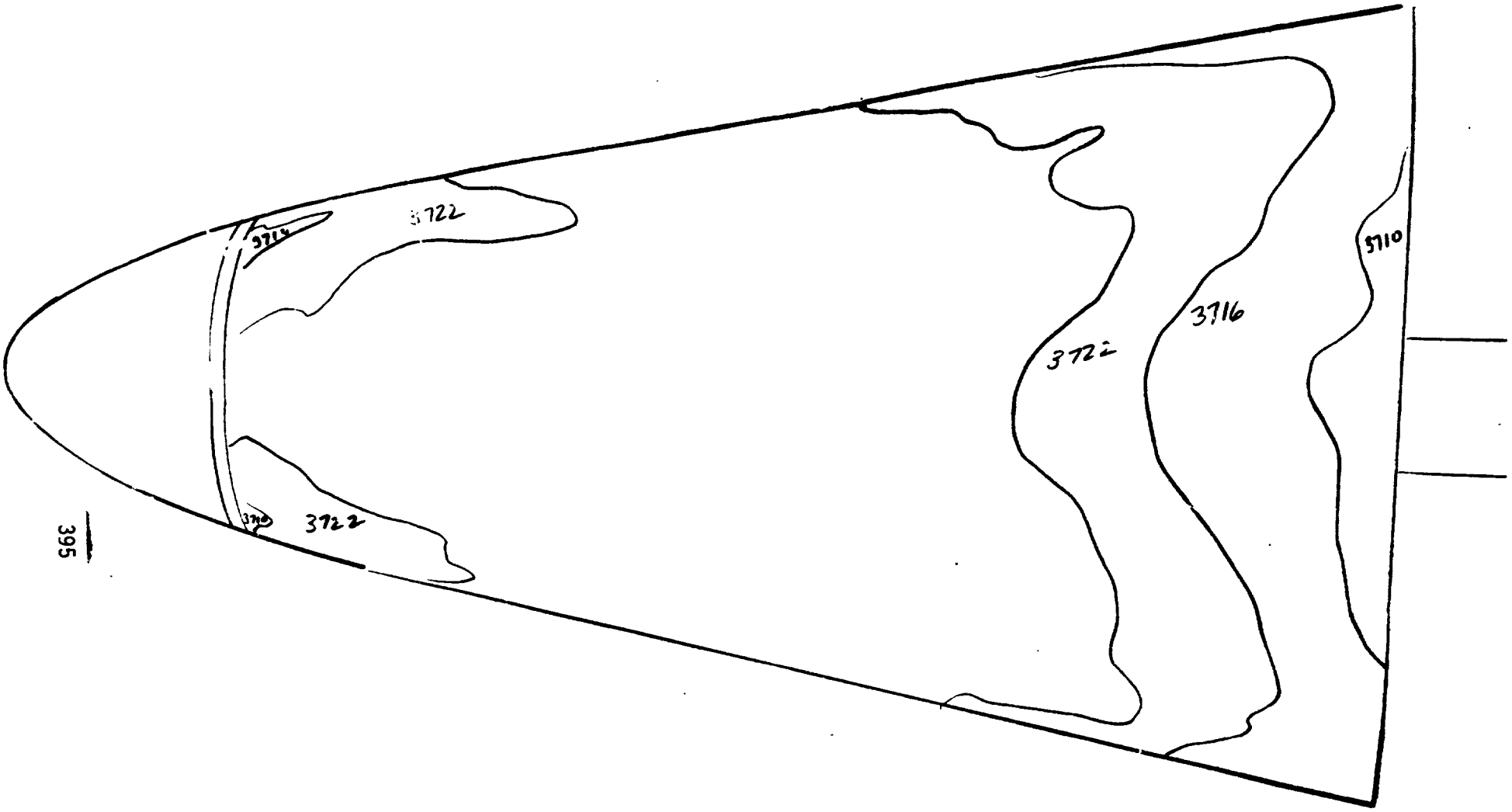
	PIC NO	TIME	DELTIME	M(TO)	M(TO)/RREF	M(.9TO)	M(.9TO)/RREF	M(.892TO)	M(.892TO)/RREF	ST(TO)
1	3694(300)	13.29	12.38	5.752E-03	.2104	7.414E-03	.2712	7.587E-03	.2775	3.349E-03
2	5359(300)	13.29	12.38	5.752E-03	.2104	7.414E-03	.2712	7.587E-03	.2775	3.349E-03
1	3695(300)	14.37	13.46	5.517E-03	.2018	7.112E-03	.2602	7.277E-03	.2662	3.212E-03
2	5360(300)	14.37	13.46	5.517E-03	.2018	7.112E-03	.2602	7.277E-03	.2662	3.212E-03
1	3696(300)	15.44	14.53	5.309E-03	.1942	6.843E-03	.2503	7.003E-03	.2562	3.091E-03
2	5361(300)	15.44	14.53	5.309E-03	.1942	6.843E-03	.2503	7.003E-03	.2562	3.091E-03
1	3697(300)	16.49	15.58	5.127E-03	.1875	6.608E-03	.2417	6.762E-03	.2474	2.984E-03
2	5362(300)	16.49	15.58	5.127E-03	.1875	6.608E-03	.2417	6.762E-03	.2474	2.984E-03
1	3698(300)	17.57	16.66	4.958E-03	.1814	6.391E-03	.2338	6.540E-03	.2392	2.886E-03
2	5363(300)	17.57	16.66	4.958E-03	.1814	6.391E-03	.2338	6.540E-03	.2392	2.886E-03
1	3699(300)	18.65	17.73	4.805E-03	.1758	6.194E-03	.2266	6.338E-03	.2319	2.797E-03
2	5364(300)	18.65	17.73	4.805E-03	.1758	6.194E-03	.2266	6.338E-03	.2319	2.797E-03
		19.27		MODEL WAS LEFT CENTERLINE						
1	3700(300)	19.70	18.79	4.669E-03	.1708	6.018E-03	.2202	6.159E-03	.2253	2.718E-03
2	5365(300)	19.70	18.79	4.669E-03	.1708	6.018E-03	.2202	6.159E-03	.2253	2.718E-03
1	3701(300)	20.77	19.86	4.541E-03	.1[illegible]1	5.853E-03	.2141	5.989E-03	.2191	2.643E-03
2	5366(300)	20.77	19.86	4.541E-03	[illegible]	5.853E-03	.2141	5.989E-03	.2191	2.643E-03
1	3702(300)	21.85	20.94	4.422E-03	.1618	5.701E-03	.2085	5.833E-03	.2134	2.575E-03
2	5367(300)	21.85	20.94	4.422E-03	.1618	5.701E-03	.2085	5.833E-03	.2134	2.575E-03

400
Gp 99
555 PSIA
860°F

$T_{PC} = 275°F$

3707 ℄

$\lambda = 30°$



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V410-824 VON KARMAN GAS DYNAMICS FACILITY

50 INCH HYPERSONIC TUNNEL A

WRGUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REB
99	11	TRIP					.110	0	1.191E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREWEND	ROLL-MODEL	YAW
7.99	856.7	1313	30.00	-.08	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
95.4	.057	2.545	3824	5.057E-05	7.674E-08	2.518E 05	2.608E-02	1.697E-02

CAMERA (OF(T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
>ICE(S)	400					
>6	391	275	88	.0627	2.444E-01	2.7017E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3704(275)	.45		MODEL HAS NOT REACHED CENTERLINE						
>	5369(275)	.45		MODEL HAS NOT REACHED CENTERLINE						
I	3705(275)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	5370(275)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
I	3706(275)	2.60	1.69	1.303E-02	.4996	1.662E-02	.6372	1.607E-02	.6161	8.340E-03
>	5371(275)	2.60	1.69	1.303E-02	.4996	1.662E-02	.6372	1.607E-02	.6161	8.340E-03
I	3707(275)	3.65	2.74	1.023E-02	.3923	1.305E-02	.5003	1.262E-02	.4838	6.548E-03
>	5372(275)	3.65	2.74	1.023E-02	.3923	1.305E-02	.5003	1.262E-02	.4838	6.548E-03
>6		3.90								
I	3708(275)	4.73	3.82	8.670E-03	.3324	1.106E-02	.4239	1.069E-02	.4099	5.549E-03
>	5373(275)	4.73	3.82	8.670E-03	.3324	1.106E-02	.4239	1.069E-02	.4099	5.549E-03
I	3709(275)	5.81	4.89	7.658E-03	.2936	9.766E-03	.3744	9.443E-03	.3620	4.901E-03
>	5374(275)	5.81	4.89	7.658E-03	.2936	9.766E-03	.3744	9.443E-03	.3620	4.901E-03
I	3710(275)	6.86	5.94	6.948E-03	.2664	8.861E-03	.3397	8.568E-03	.3285	4.446E-03
>	5375(275)	6.86	5.94	6.948E-03	.2664	8.861E-03	.3397	8.568E-03	.3285	4.446E-03
I	3711(275)	7.93	7.02	6.343E-03	.2451	8.153E-03	.3126	7.846E-03	.3023	4.091E-03
>	5376(275)	7.93	7.02	6.343E-03	.2451	8.153E-03	.3126	7.846E-03	.3023	4.091E-03
I	3712(275)	9.01	8.10	5.953E-03	.2282	7.592E-03	.2911	7.341E-03	.2815	3.810E-03
>	5377(275)	9.01	8.10	5.953E-03	.2282	7.592E-03	.2911	7.341E-03	.2815	3.810E-03
I	3713(275)	10.06	9.15	5.601E-03	.2147	7.143E-03	.2738	6.907E-03	.2648	3.584E-03
>	5378(275)	10.06	9.15	5.601E-03	.2147	7.143E-03	.2738	6.907E-03	.2648	3.584E-03
I	3714(275)	11.14	10.22	5.298E-03	.2031	6.756E-03	.2590	6.533E-03	.2505	3.390E-03
>	5379(275)	11.14	10.22	5.298E-03	.2031	6.756E-03	.2590	6.533E-03	.2505	3.390E-03
I	3715(275)	12.21	11.30	5.039E-03	.1932	6.426E-03	.2464	6.214E-03	.2382	3.225E-03
>	5380(275)	12.21	11.30	5.039E-03	.1932	6.426E-03	.2464	6.214E-03	.2382	3.225E-03

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V41R-824 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
99	11	TRIP					.110	0	1.191E 06	C

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.7	1313	30.00	-.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	STREF (IN .040 FT)
95.6	.057	2.565	3824	5.057E-05	7.679E-08	2.518E 06	2.608E-02	1.697E-02

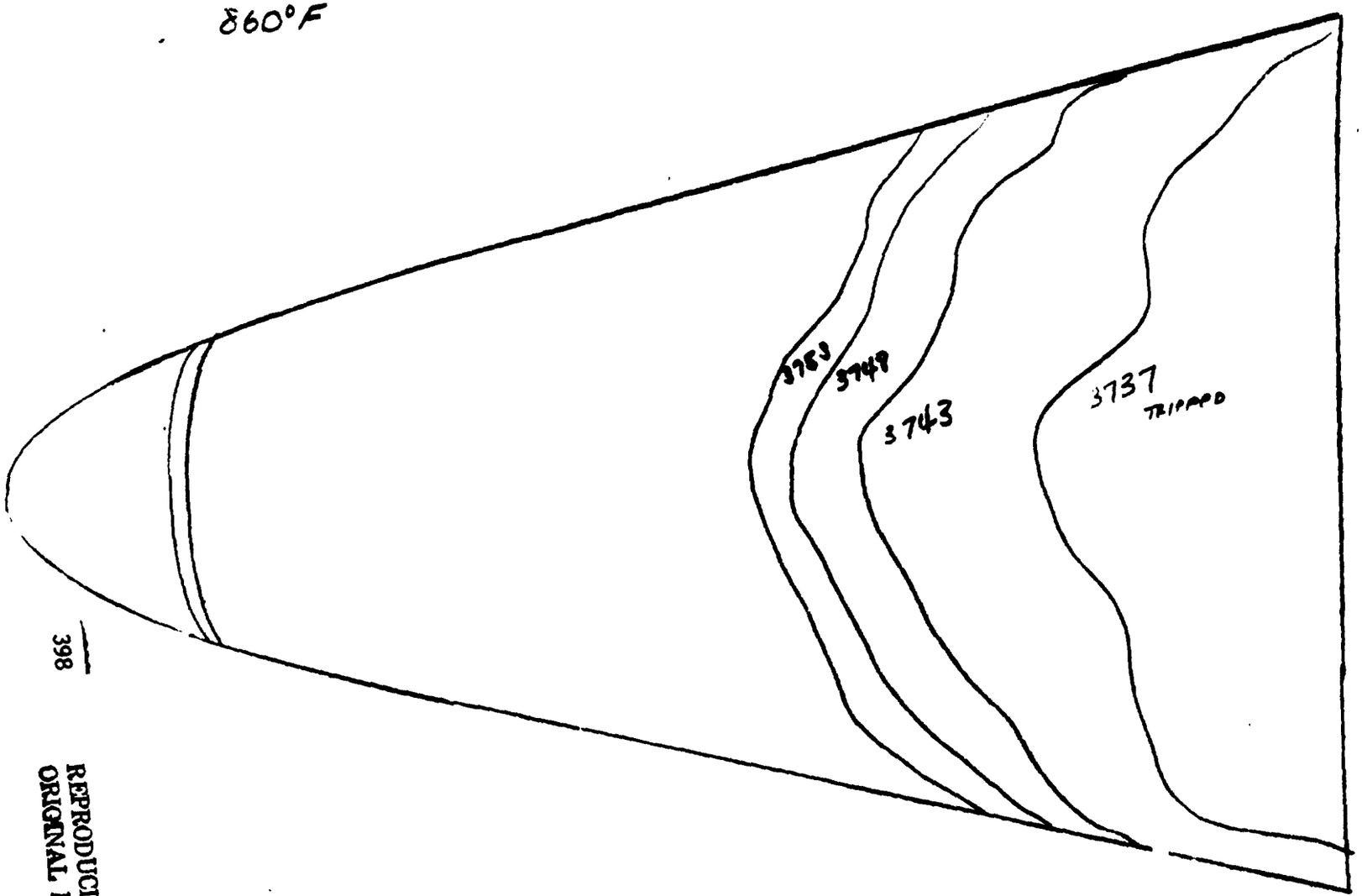
CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TRAN(TO)	RETA(TO)
10F(I)	400					
51CF(S)	391	275	80	.0627	2.444E-01	2.701E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3716(275)	13.29	12.38	4.815E-03	.1846	6.141E-03	.2354	5.938E-03	.2276	3.082E-03
S	5381(275)	13.29	12.38	4.815E-03	.1846	6.141E-03	.2354	5.938E-03	.2276	3.082E-03
I	3717(275)	14.37	13.46	4.618E-03	.1771	5.890E-03	.2258	5.695E-03	.2184	2.956E-03
S	5382(275)	14.37	13.46	4.618E-03	.1771	5.890E-03	.2258	5.695E-03	.2184	2.956E-03
S	5383(275)	15.42	14.50	4.448E-03	.1705	5.672E-03	.2175	5.485E-03	.2103	2.847E-03
I	3718(275)	15.44	14.52	4.444E-03	.1704	5.668E-03	.2173	5.480E-03	.2101	2.844E-03
I	3719(275)	16.49	15.58	4.291E-03	.1645	5.473E-03	.2098	5.292E-03	.2029	2.746E-03
S	5384(275)	16.49	15.58	4.291E-03	.1645	5.473E-03	.2098	5.292E-03	[illegible]	2.746E-03
I	3720(275)	17.57	16.66	4.151E-03	.1591	5.293E-03	.2029	5.118E-03	[illegible]	2.656E-03
S	5385(275)	17.57	16.66	4.151E-03	.1591	5.293E-03	.2029	5.118E-03	.1962	2.656E-03
I	3721(275)	18.65	17.73	4.023E-03	.1542	5.130E-03	.1967	4.961E-03	.1902	2.574E-03
S	5386(275)	18.65	17.73	4.023E-03	.1542	5.130E-03	.1967	4.961E-03	.1902	2.574E-03
I	3722(275)	19.72	18.81	3.906E-03	.1497	4.981E-03	.1910	4.817E-03	.1847	2.500E-03
S	5387(275)	19.72	18.81	3.906E-03	.1497	4.981E-03	.1910	4.817E-03	.1847	2.500E-03
		20.40		MODEL HAS LEFT CENTERLINE						
I	3723(275)	20.60	19.89	3.749E-03	.1456	4.845E-03	.1857	4.684E-03	.1796	2.431E-03
S	5388(275)	20.60	19.89	3.749E-03	.1456	4.845E-03	.1857	4.684E-03	.1796	2.431E-03
I	3724(275)	21.65	20.94	3.702E-03	.1419	4.721E-03	.1810	4.565E-03	.1750	2.369E-03
S	5389(275)	21.65	20.94	3.702E-03	.1419	4.721E-03	.1810	4.565E-03	.1750	2.369E-03
I	3725(275)	22.53	22.01	3.610E-03	.1384	4.605E-03	.1765	4.452E-03	.1707	2.311E-03
S	5390(275)	22.53	22.01	3.610E-03	.1384	4.605E-03	.1765	4.452E-03	.1707	2.311E-03
I	3726(275)	24.00	23.09	3.525E-03	.1352	4.496E-03	.1724	4.347E-03	.1667	2.256E-03
S	5391(275)	24.00	23.09	3.525E-03	.1352	4.496E-03	.1724	4.347E-03	.1667	2.254E-03

3731 ℄

400
GP 100
555 RS1A
860°F

$T_{PC} = 350°F$ $\alpha = 40°$



NASA-RI OH 56

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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V41A-A24

WRCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REX	MED
100	11	TRIP	R/L	WIDTH	DEPTH	TYPE	R/L	DIA.	
							.110	0	1.103E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREWEND	ROLL-MODEL	YAW
7.99	554.5	1315	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	WREF (R= .060 FT)	STREF (R= .060 FT)
95.5	.057	2.595	3827	5.029E-05	7.692E-08	2.502E 06	2.604E-02	1.702E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RNOACAK)	TRANS(TO)	BETA(TO)
10F(T)	400					
>IDE(S)	391	350	85	.0652	3.440E-01	4.2540E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.936TO)	H(.936TO)/HREF	ST(TO)
I	3728(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
>	5393(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
I	3729(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
>	5394(350)	1.50		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	3730(350)	2.58	1.66	2.150E-02	.8257	2.841E-02	1.0909	2.560E-02	.9831	1.377E-02
>	5395(350)	2.58	1.66	2.150E-02	.8257	2.841E-02	1.0909	2.560E-02	.9831	1.377E-02
I	3731(350)	3.65	2.74	1.076E-02	.4435	2.214E-02	.8502	1.995E-02	.7661	1.073E-02
>	5396(350)	3.65	2.74	1.076E-02	.4435	2.214E-02	.8502	1.995E-02	.7661	1.073E-02
>G			3.90							
I	3732(350)	4.73	3.82	1.420E-02	.5453	1.876E-02	.7204	1.696E-02	.6492	9.093E-03
>	5397(350)	4.73	3.82	1.420E-02	.5453	1.876E-02	.7204	1.693E-02	.6492	9.093E-03
I	3733(350)	5.81	4.86	1.254E-02	.4816	1.657E-02	.6363	1.493E-02	.5734	8.031E-03
>	5398(350)	5.81	4.86	1.254E-02	.4816	1.657E-02	.6363	1.493E-02	.5734	8.031E-03
I	3734(350)	6.88	5.97	1.135E-02	.4360	1.500E-02	.5761	1.352E-02	.5191	7.271E-03
>	5399(350)	6.88	5.97	1.135E-02	.4360	1.500E-02	.5761	1.352E-02	.5191	7.271E-03
I	3735(350)	7.93	7.02	1.047E-02	.4021	1.383E-02	.5312	1.246E-02	.4787	6.705E-03
>	5400(350)	7.93	7.02	1.047E-02	.4021	1.383E-02	.5312	1.246E-02	.4787	6.705E-03
I	3736(350)	9.01	8.10	9.749E-03	.3744	1.288E-02	.4946	1.161E-02	.4457	6.243E-03
>	5401(350)	9.01	8.10	9.749E-03	.3744	1.288E-02	.4946	1.161E-02	.4457	6.243E-03
I	3737(350)	10.09	9.17	9.159E-03	.3517	1.210E-02	.4647	1.090E-02	.4188	5.866E-03
>	5402(350)	10.09	9.17	9.159E-03	.3517	1.210E-02	.4647	1.090E-02	.4188	5.866E-03
I	3738(350)	11.16	10.25	8.665E-03	.3328	1.145E-02	.4396	1.032E-02	.3962	5.549E-03
>	5403(350)	11.16	10.25	8.665E-03	.3328	1.145E-02	.4396	1.032E-02	.3962	5.549E-03
I	3739(350)	12.21	11.30	8.252E-03	.3169	1.090E-02	.4187	9.825E-03	.3773	5.285E-03
>	5404(350)	12.21	11.30	8.252E-03	.3169	1.090E-02	.4187	9.825E-03	.3773	5.285E-03

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V41R-02A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
100	11	TRIP					.110	0	1.183E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREHEND	ROLL-MODEL	TAW
7.99	554.5	1315	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	STHEF
95.5	.057	2.556	3827	5.029E-05	7.892E-08	2.502E 06	2.604E-02 (R= .040 FT)	1.707E-02 (R= .040 FT)

CAMERA	POLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HHCRCRK)	TRAR(TO)	BETA(TO)
(OF(T))	400					
>ICE(S)	391	350	85	.0652	5.440E-01	4.2540E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3740(350)	13.29	12.38	7.865E-03	.3028	1.042E-02	.4001	9.388E-03	.3605	5.050E-03
>	5405(350)	13.29	12.38	7.865E-03	.3028	1.042E-02	.4001	9.388E-03	.3605	5.050E-03
I	3741(350)	14.37	13.46	7.5[illegible]E-03	.2905	9.942E-03	.3837	9.004E-03	.3458	4.843E-03
>	5406(350)	14.39	13.48	7.55[illegible]E-03	.2907	9.983E-03	.3836	8.996E-03	.3455	4.839E-03
I	3742(350)	15.44	14.53	7.27[illegible]E-03	.2795	9.615E-03	.3692	8.664E-03	.3327	4.661E-03
>	5407(350)	15.44	14.53	7.2[illegible]E-03	.2795	9.615E-03	.3692	8.664E-03	.3327	4.661E-03
I	3743(350)	16.52	15.61	7.[illegible]22E-03	.2697	9.277E-03	.3563	8.360E-03	.3211	4.497E-03
>	5408(350)	16.52	15.61	7.022E-03	.2697	9.277E-03	.3563	8.360E-03	.3211	4.497E-03
I	3744(350)	17.60	16.68	6.792E-03	.2608	8.973E-03	.3446	8.086E-03	.3105	4.350E-03
>	5409(350)	17.60	16.68	6.792E-03	.2608	8.973E-03	.3446	8.086E-03	.3105	4.350E-03
I	3745(350)	18.67	17.74	6.583E-03	.2528	8.697E-03	.3340	7.837E-03	.3010	4.216E-03
>	5410(350)	18.67	17.74	6.583E-03	.2528	8.697E-03	.3340	7.837E-03	.3010	4.216E-03
I	3746(350)	19.72	18.81	6.346E-03	.2456	8.458E-03	.3245	7.615E-03	.2925	4.096E-03
>	5411(350)	19.72	18.81	6.346E-03	.2456	8.458E-03	.3245	7.615E-03	.2925	4.096E-03
I	3747(350)	20.80	19.89	6.221E-03	.2389	8.219E-03	.3156	7.406E-03	.2844	3.984E-03
>	5412(350)	20.80	19.89	6.221E-03	.2389	8.219E-03	.3156	7.406E-03	.2844	3.984E-03
I	3748(350)	21.88	20.96	6.059E-03	.2327	8.005E-03	.3074	7.214E-03	.2770	3.880E-03
>	5413(350)	21.88	20.96	6.059E-03	.2327	8.005E-03	.3074	7.214E-03	.2770	3.880E-03
I	3749(350)	22.95	22.04	5.909E-03	.2269	7.807E-03	.2998	7.035E-03	.2702	3.784E-03
>	5414(350)	22.95	22.04	5.909E-03	.2269	7.807E-03	.2998	7.035E-03	.2702	3.784E-03
I	3750(350)	24.00	23.09	5.773E-03	.2217	7.627E-03	.2929	6.873E-03	.2640	3.697E-03
>	5415(350)	24.00	23.09	5.773E-03	.2217	7.627E-03	.2929	6.873E-03	.2640	3.697E-03
I	3751(350)	25.08	24.17	5.643E-03	.2167	7.455E-03	.2863	6.718E-03	.2580	3.614E-03
>	5416(350)	25.08	24.17	5.643E-03	.2167	7.455E-03	.2863	6.718E-03	.2580	3.614E-03
I	3752(350)	26.16	25.24	5.521E-03	.2120	7.295E-03	.2801	6.574E-03	.2525	3.536E-03
>	5417(350)	26.16	25.24	5.521E-03	.2120	7.295E-03	.2801	6.574E-03	.2525	3.536E-03

400

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	MED
100	11	TRIP					.110	0	1.183E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SFCTCH	ALPHA-PREWEND	ROLL-MODEL	YAW
7.99	554.5	1315	40.00	-10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
95.5	.057	2.555	3027	5.029E-05	7.692E-08	2.502E 04	2.404E-02	1.702E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACAK)	TRAR(TO)	BETA(TO)
IOF(I)	400					
SICE(S)	391	350	95	.0652	3.440E-01	4.2546E-01
S6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3753(350)	27.21	26.29	5.410E-03	.2078	7.147E-03	.2745	6.441E-03	.2474	3.445E-03
S	5418(350)	27.23	26.32	5.407E-03	.2077	7.144E-03	.2744	6.438E-03	.2472	3.463E-03
I	3754(350)	28.28	27.37	5.302E-03	.2036	7.005E-03	.2690	6.313E-03	.2424	3.396E-03
S	5419(350)	28.28	27.37	5.302E-03	.2036	7.005E-03	.2690	6.313E-03	.2424	3.396E-03
		29.13		MODEL HAS LEFT CENTERLINE						
I	3755(350)	29.36	28.45	5.201E-03	.1997	6.872E-03	.2639	6.192E-03	.2378	3.331E-03
S	5420(350)	29.36	28.45	5.201E-03	.1997	6.872E-03	.2639	6.192E-03	.2378	3.331E-03
I	3756(350)	30.44	29.52	5.106E-03	.1961	6.745E-03	.2590	6.078E-03	.2334	3.270E-03
S	5421(350)	30.44	29.52	5.106E-03	.1961	6.745E-03	.2590	6.078E-03	.2334	3.270E-03
I	3757(350)	31.51	30.60	5.015E-03	.1926	6.626E-03	.2544	5.971E-03	.2293	3.212E-03
S	5422(350)	31.51	30.60	5.015E-03	.1926	6.626E-03	.2544	5.971E-03	.2293	3.212E-03
I	3758(350)	32.59	31.67	4.929E-03	.1893	6.512E-03	.2501	5.868E-03	.2254	3.157E-03
S	5423(350)	32.59	31.67	4.929E-03	.1893	6.512E-03	.2501	5.868E-03	.2254	3.157E-03
I	3759(350)	33.64	32.73	4.849E-03	.1862	6.407E-03	.2460	5.773E-03	.2217	3.105E-03
S	5424(350)	33.64	32.73	4.849E-03	.1862	6.407E-03	.2460	5.773E-03	.2217	3.105E-03
I	3760(350)	34.71	33.80	4.771E-03	.1832	6.304E-03	.2421	5.681E-03	.2182	3.056E-03
S	5425(350)	34.71	33.80	4.771E-03	.1832	6.304E-03	.2421	5.681E-03	.2182	3.056E-03

400

GP101

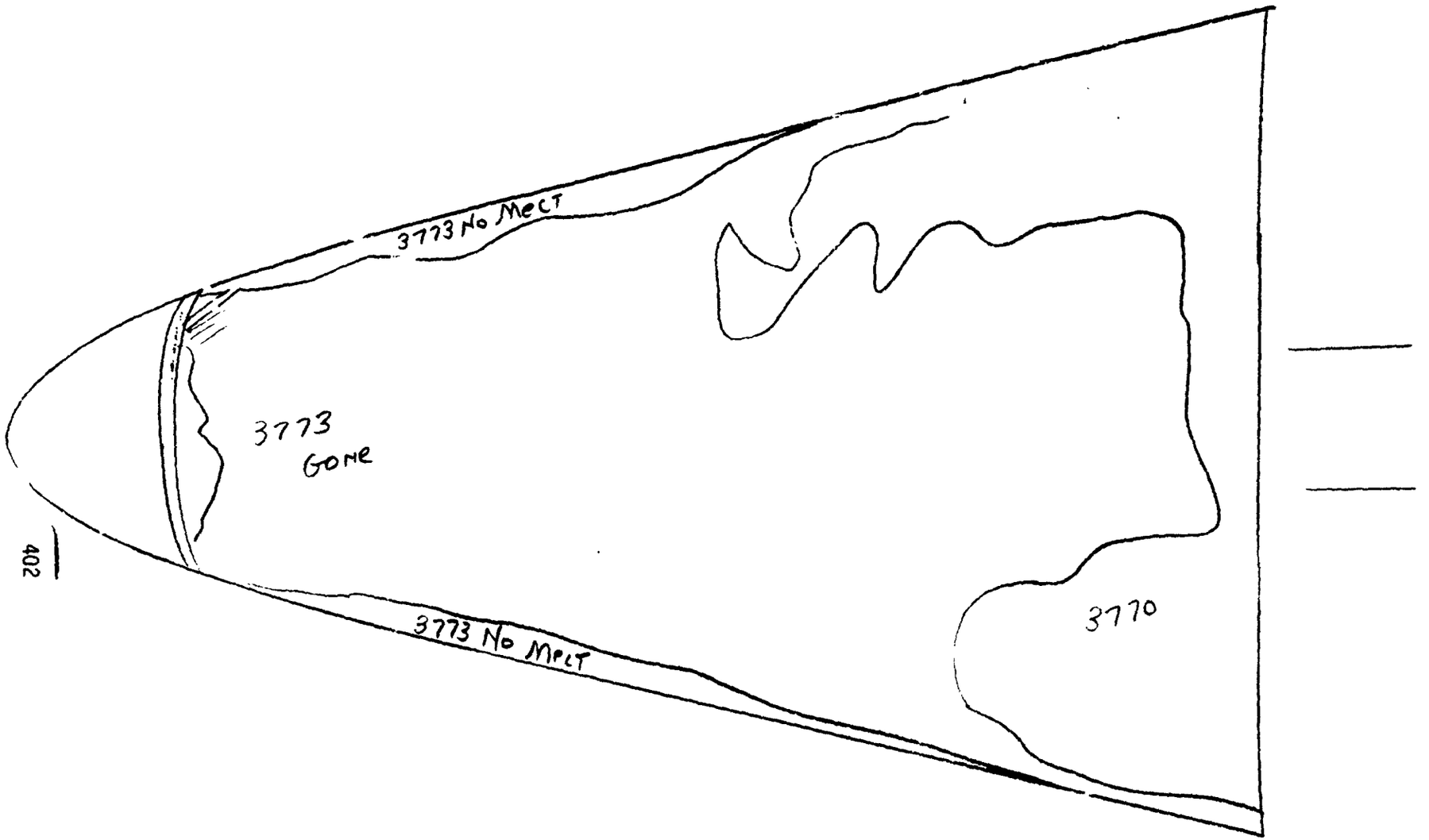
555 PSIA

860°F

T_{PC} = 350°F

α = 40°

3765 ℄



NASA-RI AM 56

V41A-826

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP CONFIG *** MODEL DESCRIPTION ***

101 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REN	RED
			5	.110	.070	1.190E 06	6.195E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-FREEND	ROLL-MODEL	YAW
7.99	554.2	1312	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	STREF
95.3	.057	2.558	3821	5.040E-05	7.670E-08	2.511E 06	2.402E-02 (R= .060 FT)	1.700E-02 (R= .060 FT)

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HRGACAR)	TBAR(TO)	BETA(TO)
106(S)	400					
5ICE(S)	391	350	96	.0652	3.448E-01	4.2684E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
				MODEL HAS NOT REACHED CENTERLINE						
I	3762(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
5	5427(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3763(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
5	5428(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
IN-FCT TIME =			1.65							
I	3764(350)	2.60	1.68	2.130E-02	.8369	2.845E-02	1.0932	2.561E-02	.9865	1.376E-02
5	5429(350)	2.60	1.68	2.130E-02	.8369	2.845E-02	1.0932	2.561E-02	.9865	1.376E-02
I	3765(350)	3.68	2.76	1.678E-02	.6448	2.220E-02	.8531	1.994E-02	.7682	1.074E-02
5	5430(350)	3.68	2.76	1.678E-02	.6448	2.220E-02	.8531	1.994E-02	.7682	1.074E-02
56			3.93							
I	3766(350)	4.73	3.88	1.427E-02	.5485	1.888E-02	.7257	1.700E-02	.6535	9.133E-03
5	5431(350)	4.73	3.88	1.427E-02	.5485	1.888E-02	.7257	1.700E-02	.6535	9.133E-03
I	3767(350)	5.81	4.88	1.200E-02	.4842	1.667E-02	.6666	1.501E-02	.5769	8.063E-03
5	5432(350)	5.81	4.88	1.200E-02	.4842	1.667E-02	.6666	1.501E-02	.5769	8.063E-03
I	3768(350)	6.88	5.96	1.140E-02	.4383	1.509E-02	.5799	1.359E-02	.5222	7.298E-03
5	5433(350)	6.88	5.96	1.140E-02	.4383	1.509E-02	.5799	1.359E-02	.5222	7.298E-03
I	3769(350)	7.93	7.01	1.051E-02	.4041	1.391E-02	.5346	1.253E-02	.4816	6.729E-03
5	5434(350)	7.93	7.01	1.051E-02	.4041	1.391E-02	.5346	1.253E-02	.4816	6.729E-03
I	3770(350)	9.01	8.08	9.784E-03	.3762	1.295E-02	.4977	1.166E-02	.4482	6.265E-03
5	5435(350)	9.01	8.08	9.784E-03	.3762	1.295E-02	.4977	1.166E-02	.4482	6.265E-03
I	3771(350)	10.06	9.13	9.208E-03	.3539	1.218E-02	.4682	1.097E-02	.4216	5.893E-03
5	5436(350)	10.06	9.13	9.208E-03	.3539	1.218E-02	.4682	1.097E-02	.4216	5.893E-03
I	3772(350)	11.14	10.21	8.709E-03	.3347	1.152E-02	.4429	1.038E-02	.3988	5.574E-03
5	5437(350)	11.14	10.21	8.709E-03	.3347	1.152E-02	.4429	1.038E-02	.3988	5.574E-03
I	3773(350)	12.19	11.26	8.243E-03	.3187	1.097E-02	.4217	9.880E-03	.3797	5.307E-03
5	5438(350)	12.19	11.26	8.243E-03	.3187	1.097E-02	.4217	9.880E-03	.3797	5.307E-03

WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	REB
101	11	TRIP				5	.110	.070	1.188E 06	4.185E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREWEND	ROLL-MODEL	YAW
7.99	554.2	1312	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (WR .040 FT)
95.3	.057	2.558	3821	9.040E-05	7.670E-08	2.511E 06	2.602E-02	1.708E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TRAR(TO)	BETA(TO)
10F(T)	400					
>ICE(S)	391	350	86	.0652	3.448E-01	4.2684E-01
>6						

	PIC NO	TIME 12:00	DELTIME	H(TO) MODEL WAS LEFT CENTERLINE	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3774(350)	13.27	12.34	7.923E-03	.3045	1.048E-02	.4029	9.440E-03	.3428	5.071E-03
>	5439(350)	13.27	12.34	7.923E-03	.3045	1.048E-02	.4029	9.440E-03	.3428	5.071E-03
1	3775(350)	14.34	13.41	7.588E-03	.2920	1.005E-02	.3864	9.053E-03	.3479	4.863E-03
>	5440(350)	14.34	13.41	7.588E-03	.2920	1.005E-02	.3864	9.053E-03	.3479	4.863E-03
1	3776(350)	15.42	14.49	7.311E-03	.2810	9.673E-03	.3718	8.710E-03	.3348	4.679E-03
>	5441(350)	15.42	14.49	7.311E-03	.2810	9.673E-03	.3718	8.710E-03	.3348	4.679E-03
1	3777(350)	16.49	15.57	7.054E-03	.2711	9.332E-03	.3587	8.404E-03	.3230	4.514E-03
>	5442(350)	16.49	15.57	7.054E-03	.2711	9.332E-03	.3587	8.404E-03	.3230	4.514E-03

400

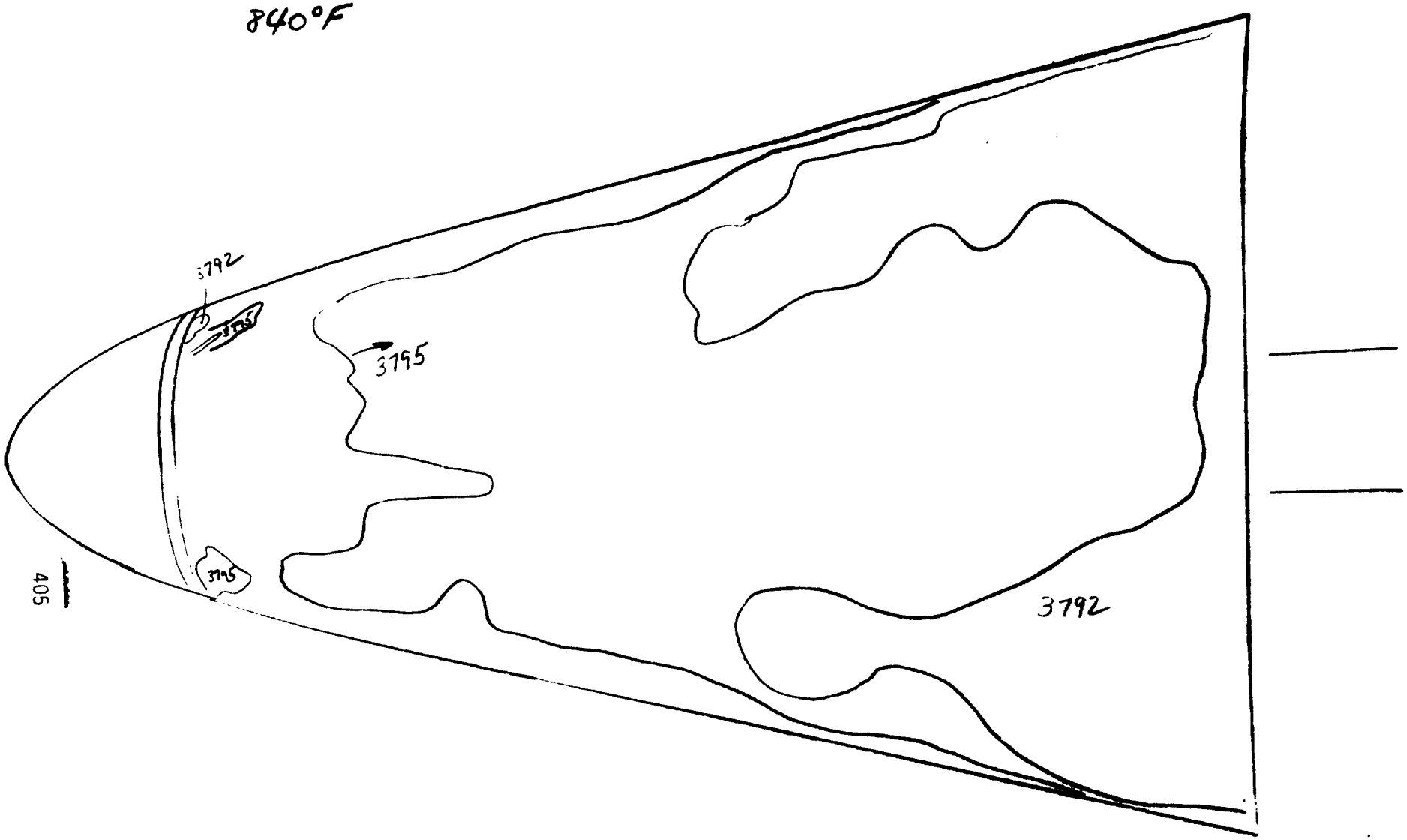
GP102

425 PSIA

840°F

T_c=350°F λ=40°

3782 ℄



NASA-RI CH 54 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 6-76 PAGE 1

V41H-A24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP CONFIG *** MODEL DESCRIPTION ***

102 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
			5	.110	.020	9.359E 05	3.290E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	425.7	1292	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.1	.044	1.976	3793	3.952E-05	7.570E-08	1.979E 06	2.281E-02	1.917E-02

CAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAA)	TRAR(TO)	BETA(TO)
IOF(T)	400					
SICE(S)	391	350	87	.0652	3.528E-01	4.4183E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3779(35A)	.08		MODEL HAS NOT REACHED CENTERLINE						
S	5444(35C)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3780(35A)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	5445(35C)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	3781(35A)	2.60	1.68	2.221E-02	.9739	2.962E-02	1.2983	2.659E-02	1.1655	1.829E-02
S	5446(35C)	2.60	1.68	2.221E-02	.9739	2.962E-02	1.2983	2.659E-02	1.1655	1.829E-02
I	3782(35A)	3.68	2.76	1.733E-02	.7599	2.311E-02	1.0131	2.075E-02	.9095	1.427E-02
S	5447(35C)	3.68	2.76	1.733E-02	.7599	2.311E-02	1.0131	2.075E-02	.9095	1.427E-02
SG		3.93								
I	3783(35A)	4.76	3.83	1.470E-02	.6443	1.959E-02	.8590	1.759E-02	.7711	1.210E-02
S	5448(35C)	4.76	3.83	1.470E-02	.6443	1.959E-02	.8590	1.759E-02	.7711	1.210E-02
I	3784(35A)	5.83	4.90	1.294E-02	.5692	1.731E-02	.7589	1.554E-02	.6813	1.069E-02
S	5449(35C)	5.83	4.90	1.294E-02	.5692	1.731E-02	.7589	1.554E-02	.6813	1.069E-02
I	3785(35A)	6.91	5.98	1.176E-02	.5155	1.568E-02	.6872	1.407E-02	.6169	9.679E-03
S	5450(35C)	6.91	5.98	1.176E-02	.5155	1.568E-02	.6872	1.407E-02	.6169	9.679E-03
I	3786(35A)	7.96	7.03	1.084E-02	.4754	1.446E-02	.6338	1.296E-02	.5680	8.926E-03
S	5451(35C)	7.96	7.03	1.084E-02	.4754	1.446E-02	.6338	1.296E-02	.5680	8.926E-03
I	3787(35A)	9.04	8.11	1.010E-02	.4427	1.346E-02	.5902	1.209E-02	.5299	8.313E-03
S	5452(35C)	9.04	8.11	1.010E-02	.4427	1.346E-02	.5902	1.209E-02	.5299	8.313E-03
I	3788(35A)	10.11	9.18	9.468E-03	.4160	1.265E-02	.5546	1.136E-02	.4978	7.811E-03
S	5453(35C)	10.11	9.18	9.468E-03	.4160	1.265E-02	.5546	1.136E-02	.4978	7.811E-03
I	3789(35A)	11.21	10.29	8.966E-03	.3931	1.195E-02	.5240	1.073E-02	.4704	7.381E-03
S	5454(35C)	11.21	10.29	8.966E-03	.3931	1.195E-02	.5240	1.073E-02	.4704	7.381E-03
I	3790(35A)	12.26	11.34	8.540E-03	.3744	1.139E-02	.4991	1.022E-02	.4481	7.030E-03
S	5455(35C)	12.26	11.34	8.540E-03	.3744	1.139E-02	.4991	1.022E-02	.4481	7.030E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	HEO
102	11	TRIP				5	.110	.070	9.359E 05	3.298E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	425.7	1292	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SIREF (H= .040 FT)
96.1	.044	1.976	3793	3.952E-05	7.576E-08	1.579E 06	2.281E-02	1.917E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHUSCXM)	TRAN(TO)	HETA(TO)
10F(T)	400					
5ICE(S)	391	350	87	.0692	3.528E-01	4.410E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3791(35M)	13.29	12.34	8.178E-03	.3585	1.098E-02	.4780	9.788E-03	.4291	6.732E-03
1	3792(35M)	14.34	13.41	7.851E-03	.3442	1.047E-02	.4589	9.396E-03	.4119	6.463E-03
1	3793(35M)	15.37	14.44	7.587E-03	.3317	1.009E-02	.4423	9.056E-03	.3970	6.229E-03
1	3794(35M)	16.39	15.47	7.312E-03	.3205	9.748E-03	.4273	8.751E-03	.3836	6.019E-03
1	3795(35M)	17.45	16.52	7.075E-03	.3102	9.433E-03	.4135	8.468E-03	.3712	5.824E-03
		17.57		MODEL HAS LEFT CENTERLINE						
1	3796(35M)	18.50	17.57	6.860E-03	.3009	9.146E-03	.4010	8.211E-03	.3599	5.647E-03
1	3797(35M)	19.52	18.60	6.668E-03	.2923	8.890E-03	.3897	7.981E-03	.3499	5.489E-03
1	3798(35M)	20.57	19.65	6.487E-03	.2844	8.649E-03	.3792	7.764E-03	.3404	5.340E-03
1	3799(35M)	21.62	20.70	6.321E-03	.2771	8.428E-03	.3694	7.565E-03	.3316	5.203E-03

400

Gp 103

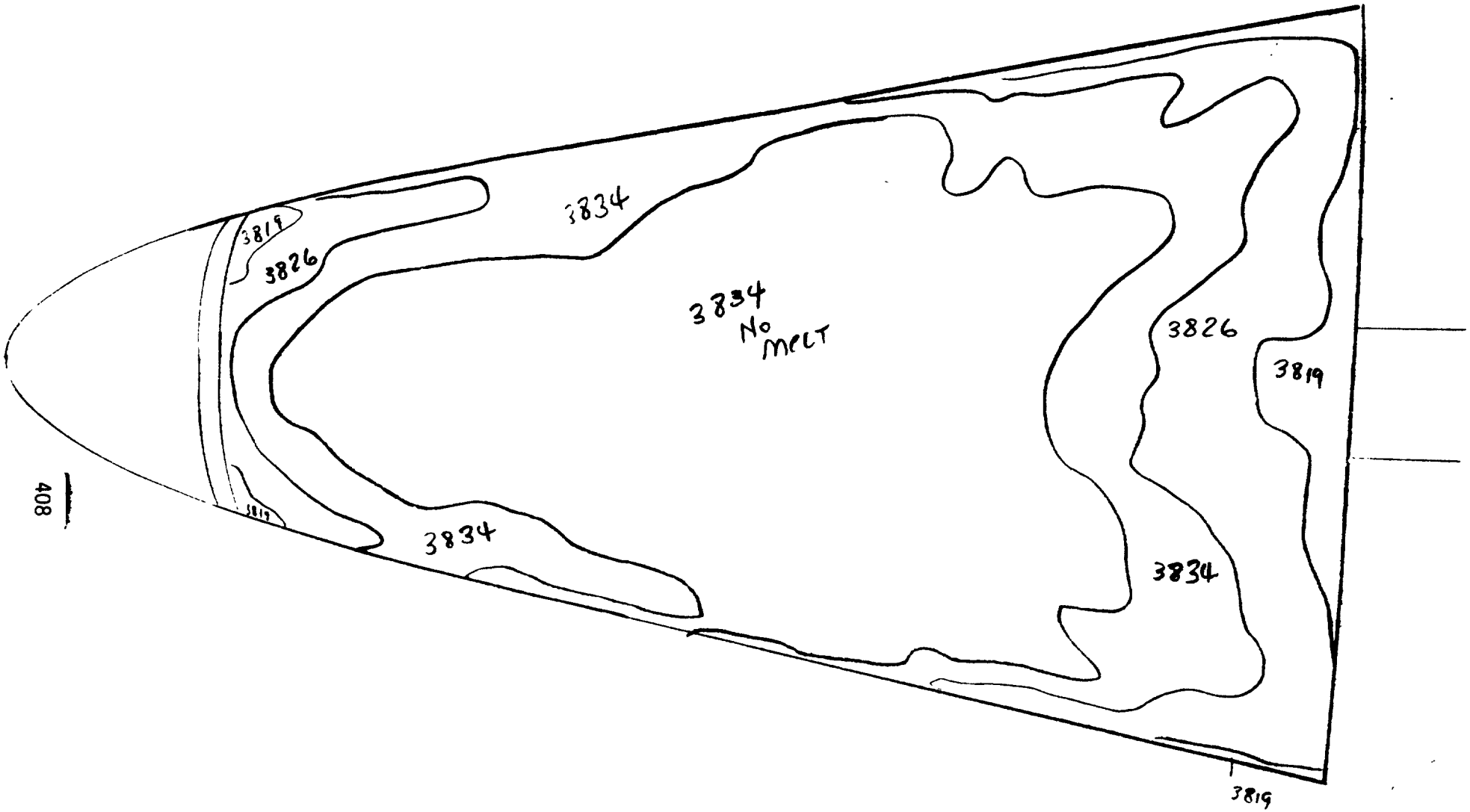
$\alpha = 30°$

$T_{AC} = 275°F$

3808 ℄

125 PSIA

840°F



WRCHP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	REO
303	11	TRIP					.110	0	9.390E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	426.7	1201	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (N= .040 FT)	SREF (N= .040 FT)*
94.0	.044	1.990	3791	3.966E-05	7.567E-08	1.587E 04	2.283E-02	1.913E-02

LAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TBAR(TO)	BETA(TO)
(OF(I))	400					
>IDE(S)	394	275	87	.0627	2.527E-01	2.817E-01
>6						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/HREF	M(.9TO)	M(.9TO)/HREF	M(.912TO)	M(.912TO)/HREF	ST(TO)
I	3805(275)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5471(275)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3806(275)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	5472(275)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.69							
I	3807(275)	2.60	1.69	1.359E-02	.5953	1.744E-02	.7637	1.686E-02	.7377	1.120E-02
>	5473(275)	2.60	1.69	1.359E-02	.5953	1.744E-02	.7637	1.686E-02	.7377	1.120E-02
I	3808(275)	3.68	2.77	1.062E-02	.4653	1.363E-02	.5969	1.316E-02	.5766	8.755E-03
>	5474(275)	3.68	2.77	1.062E-02	.4653	1.363E-02	.5969	1.316E-02	.5766	8.755E-03
>6			3.93							
I	3809(275)	4.76	3.84	9.014E-03	.3948	1.156E-02	.5064	1.117E-02	.4892	7.428E-03
>	5475(275)	4.76	3.84	9.014E-03	.3948	1.156E-02	.5064	1.117E-02	.4892	7.424E-03
I	3810(275)	5.81	4.89	7.967E-03	.3498	1.025E-02	.4488	9.897E-03	.4335	6.582E-03
>	5476(275)	5.81	4.89	7.967E-03	.3498	1.025E-02	.4488	9.897E-03	.4335	6.582E-03
I	3811(275)	6.88	5.97	7.231E-03	.3167	9.277E-03	.4063	8.961E-03	.3925	5.955E-03
>	5477(275)	6.91	5.99	7.216E-03	.3160	9.257E-03	.4054	8.962E-03	.3916	5.947E-03
I	3812(275)	7.96	7.05	6.656E-03	.2915	8.539E-03	.3740	8.248E-03	.3613	5.485E-03
>	5478(275)	7.96	7.05	6.656E-03	.2915	8.539E-03	.3740	8.248E-03	.3613	5.485E-03
I	3813(275)	9.04	8.12	6.199E-03	.2715	7.953E-03	.3483	7.682E-03	.3365	5.109E-03
>	5479(275)	9.04	8.12	6.199E-03	.2715	7.953E-03	.3483	7.682E-03	.3365	5.109E-03
I	3814(275)	10.11	9.20	5.825E-03	.2551	7.473E-03	.3273	7.219E-03	.3162	4.801E-03
>	5480(275)	10.11	9.20	5.825E-03	.2551	7.473E-03	.3273	7.219E-03	.3162	4.801E-03
I	3815(275)	11.16	10.25	5.519E-03	.2417	7.080E-03	.3101	6.839E-03	.2995	4.548E-03
>	5481(275)	11.16	10.25	5.519E-03	.2417	7.080E-03	.3101	6.839E-03	.2995	4.548E-03
I	3816(275)	12.24	11.33	5.250E-03	.2299	6.735E-03	.2950	6.504E-03	.2849	4.327E-03
>	5482(275)	12.24	11.33	5.250E-03	.2299	6.735E-03	.2950	6.504E-03	.2849	4.327E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	MED
103	11	TRIP					.110	0	9.300E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	426.7	1291	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SIREF (W= .040 FT)
94.0	.044	1.980	3791	3.946E-05	7.567E-08	1.987E 04	2.283E-02	1.913E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SOUARE ROOT (RHOACAK)	TRAN(TO)	BETA(TO)
10F(T)	400					
SICE(S)	396	275	87	.0627	2.527E-01	2.878E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3R17(275)	13.32	12.40	5.017E-03	.2197	6.436E-03	.2819	6.217E-03	.2723	4.135E-03
5	5483(275)	13.32	12.40	5.017E-03	.2197	6.436E-03	.2819	6.217E-03	.2723	4.135E-03
1	3R18(275)	14.39	13.48	4.812E-03	.2108	6.174E-03	.2704	5.964E-03	.2612	3.966E-03
5	5484(275)	14.39	13.48	4.812E-03	.2108	6.174E-03	.2704	5.964E-03	.2612	3.966E-03
1	3R19(275)	15.47	14.55	4.631E-03	.2028	5.941E-03	.2602	5.734E-03	.2514	3.817E-03
5	5485(275)	15.47	14.55	4.631E-03	.2028	5.941E-03	.2602	5.734E-03	.2514	3.817E-03
1	3R20(275)	16.54	15.63	4.469E-03	.1957	5.733E-03	.2511	5.538E-03	.2425	3.683E-03
5	5486(275)	16.54	15.63	4.469E-03	.1957	5.733E-03	.2511	5.538E-03	.2425	3.683E-03
1	3R21(275)	17.62	16.71	4.322E-03	.1893	5.545E-03	.2429	5.356E-03	.2346	3.562E-03
5	5487(275)	17.62	16.71	4.322E-03	.1893	5.545E-03	.2429	5.356E-03	.2346	3.562E-03
1	3R22(275)	18.70	17.78	4.190E-03	.1835	5.375E-03	.2354	5.192E-03	.2274	3.453E-03
5	5488(275)	18.70	17.78	4.190E-03	.1835	5.375E-03	.2354	5.192E-03	.2274	3.453E-03
1	3R23(275)	19.77	18.86	4.068E-03	.1782	5.219E-03	.2286	5.042E-03	.2208	3.353E-03
5	5489(275)	19.77	18.86	4.068E-03	.1782	5.219E-03	.2286	5.042E-03	.2208	3.353E-03
1	3R24(275)	20.85	19.94	3.957E-03	.1733	5.076E-03	.2223	4.904E-03	.2148	3.261E-03
5	5490(275)	20.85	19.94	3.957E-03	.1733	5.076E-03	.2223	4.904E-03	.2148	3.261E-03
1	3R25(275)	21.93	21.01	3.854E-03	.1688	4.945E-03	.2166	4.776E-03	.2092	3.176E-03
5	5491(275)	21.93	21.01	3.854E-03	.1688	4.945E-03	.2166	4.776E-03	.2092	3.176E-03
1	3R26(275)	22.98	22.04	3.761E-03	.1647	4.825E-03	.2113	4.661E-03	.2041	3.100E-03
5	5492(275)	22.98	22.04	3.761E-03	.1647	4.825E-03	.2113	4.661E-03	.2041	3.100E-03
1	3R27(275)	24.05	23.14	3.673E-03	.1609	4.712E-03	.2064	4.551E-03	.1993	3.027E-03
5	5493(275)	24.05	23.14	3.673E-03	.1609	4.712E-03	.2064	4.551E-03	.1993	3.027E-03
1	3R28(275)	25.13	24.22	3.590E-03	.1572	4.606E-03	.2017	4.444E-03	.1949	2.959E-03
5	5494(275)	25.13	24.22	3.590E-03	.1572	4.606E-03	.2017	4.444E-03	.1949	2.959E-03
1	3R29(275)	26.18	25.27	3.515E-03	.1539	4.509E-03	.1975	4.356E-03	.1908	2.897E-03
5	5495(275)	26.18	25.27	3.515E-03	.1539	4.509E-03	.1975	4.356E-03	.1908	2.897E-03

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V41H-824

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP CONFIG *** MODEL DESCRIPTION ***

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	RER	RED
				.110	0	9.398E 05	0

103 11 TRIP

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	426.7	1291	30.00	0	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
94.0	.044	1.98C	3791	3.966E-05	7.567E-08	1.587E 06	2.283E-02	1.913E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRAN(TO)	BETA(TO)
10F(T)	400					
>ICF(S)	394	275	87	.0627	7.527E-01	2.9178E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	S1(TO)
>	5498(275)	27.26	26.34	3.442E-03	.1508	4.416E-03	.1934	4.266E-03	.1868	2.837E-03
I	3830(275)	27.28	26.37	3.441E-03	.1507	4.414E-03	.1933	4.264E-03	.1867	2.836E-03
>	5497(275)	28.23	27.42	3.374E-03	.1478	4.328E-03	.1896	4.181E-03	.1831	2.781E-03
I	3832(275)	28.23	27.42	3.374E-03	.1478	4.326E-03	.1896	4.181E-03	.1831	2.781E-03
>	5496(275)	29.41	28.54	3.310E-03	.1450	4.246E-03	.1860	4.101E-03	.1796	2.728E-03
I	3833(275)	29.41	28.54	3.310E-03	.1450	4.246E-03	.1860	4.101E-03	.1796	2.728E-03
>	5499(275)	30.49	29.57	3.249E-03	.1423	4.168E-03	.1825	4.026E-03	.1763	2.678E-03
I	3834(275)	30.49	29.57	3.249E-03	.1423	4.168E-03	.1825	4.026E-03	.1763	2.678E-03
>	5500(275)	31.56	30.65	3.191E-03	.1398	4.094E-03	.1793	3.955E-03	.1732	2.630E-03
I	3835(275)	31.56	30.65	3.191E-03	.1398	4.094E-03	.1793	3.955E-03	.1732	2.630E-03
>	5501(275)	32.64	31.72	3.137E-03	.1374	4.024E-03	.1762	3.887E-03	.1702	2.585E-03
		32.64	31.72	3.137E-03	.1374	4.024E-03	.1762	3.887E-03	.1702	2.585E-03
		32.64		MODEL HAS LEFT CENTERLINE						
I	3836(275)	33.71	32.80	3.085E-03	.1351	3.958E-03	.1733	3.823E-03	.1674	2.542E-03
>	5502(275)	33.71	32.80	3.085E-03	.1351	3.958E-03	.1733	3.823E-03	.1674	2.542E-03
I	3837(275)	34.79	33.88	3.036E-03	.1329	3.894E-03	.1706	3.762E-03	.1648	2.502E-03
>	5503(275)	34.79	33.88	3.036E-03	.1329	3.894E-03	.1706	3.762E-03	.1648	2.502E-03
I	3838(275)	35.87	34.95	2.988E-03	.1309	3.834E-03	.1679	3.703E-03	.1622	2.463E-03
>	5504(275)	35.87	34.95	2.988E-03	.1309	3.834E-03	.1679	3.703E-03	.1622	2.463E-03
I	3839(275)	36.94	35.03	2.943E-03	.1289	3.776E-03	.1654	3.646E-03	.1598	2.426E-03
>	5505(275)	36.94	35.03	2.943E-03	.1289	3.776E-03	.1654	3.646E-03	.1598	2.426E-03
I	3840(275)	38.02	37.11	2.900E-03	.1270	3.721E-03	.1630	3.594E-03	.1574	2.390E-03
>	5506(275)	38.02	37.11	2.900E-03	.1270	3.721E-03	.1630	3.594E-03	.1574	2.390E-03

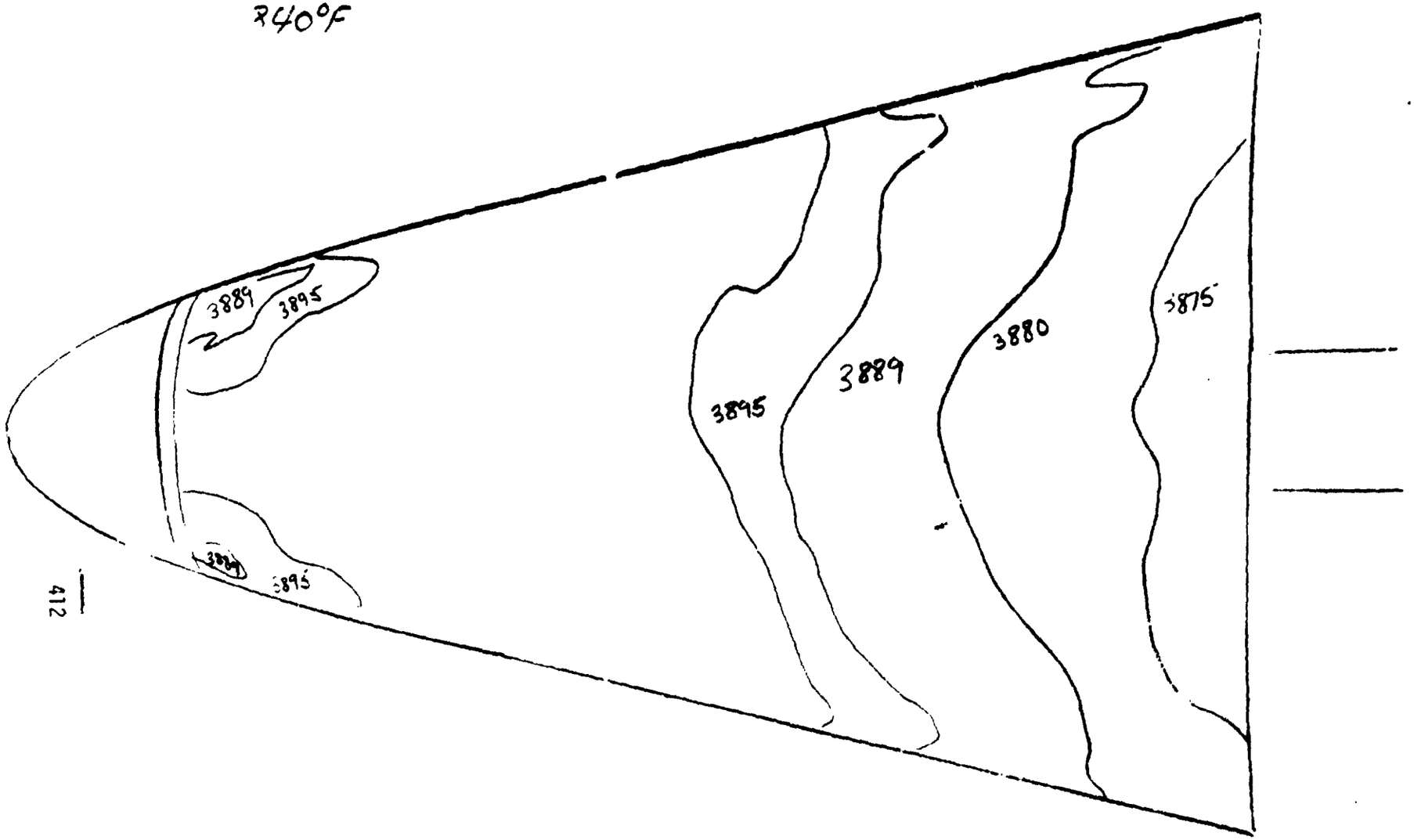
437
GP104

$\alpha = 40°$

3870 ℄

$T_{PC} = 300°F$

425 PSIA
240°F



GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REA	HED
104	11	TRIP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.	
							.110	0	9.311E 05

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	VAR
7.98	475.5	1297	30.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (NO .060 FT)	SIREF (NO .060 FT)
94.4	.044	1.975	3799	3.993E-05	7.599E-08	1.96RE 04	2.282E-02	1.921E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HNOCACAR)	TRAR(TO)	BETA(TO)
(OP(T)	437					
>ICE(S)	394	300	87	.0636	2.842E-01	3.2790E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3R67(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5508(300)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3R68(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5509(300)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	3R69(300)	2.63	1.78	1.549E-02	.7009	2.072E-02	.9079	1.882E-02	.8249	1.322E-02
>	5510(300)	2.63	1.78	1.549E-02	.7009	2.072E-02	.9079	1.882E-02	.8249	1.322E-02
I	3R70(300)	3.70	2.78	1.251E-02	.5485	1.621E-02	.7105	1.473E-02	.6455	1.035E-02
>	5511(300)	3.70	2.78	1.251E-02	.5485	1.621E-02	.7105	1.473E-02	.6455	1.035E-02
>6		3.95								
I	3R71(300)	4.76	3.83	1.066E-02	.4671	1.381E-02	.6052	1.254E-02	.5498	8.816E-03
>	5512(300)	4.76	3.83	1.066E-02	.4671	1.381E-02	.6052	1.254E-02	.5498	8.816E-03
I	3R72(300)	5.86	4.93	9.343E-03	.4117	1.217E-02	.5333	1.108E-02	.4865	7.767E-03
>	5513(300)	5.86	4.93	9.343E-03	.4117	1.217E-02	.5333	1.108E-02	.4865	7.767E-03
I	3R73(300)	6.93	6.01	8.510E-03	.3730	1.102E-02	.4831	1.002E-02	.4390	7.037E-03
>	5514(300)	6.93	6.01	8.510E-03	.3730	1.102E-02	.4831	1.002E-02	.4390	7.037E-03
I	3R74(300)	8.01	7.08	7.837E-03	.3435	1.015E-02	.4449	9.223E-03	.4042	6.480E-03
>	5515(300)	8.01	7.08	7.837E-03	.3435	1.015E-02	.4449	9.223E-03	.4042	6.480E-03
I	3R75(300)	9.09	8.16	7.301E-03	[illegible]	9.459E-03	.4145	8.593E-03	.3766	6.037E-03
>	5516(300)	9.09	8.16	7.301E-03	[illegible]	9.459E-03	.4145	8.593E-03	.3766	6.037E-03
I	3R76(300)	10.16	9.23	6.863E-03	.3008	8.890E-03	.3896	8.077E-03	.3540	5.675E-03
>	5517(300)	10.16	9.23	6.863E-03	.3008	8.890E-03	.3896	8.077E-03	.3540	5.675E-03
I	3R77(300)	11.24	10.31	6.495E-03	.2846	8.413E-03	.3687	7.644E-03	.3350	5.370E-03
>	5518(300)	11.24	10.31	6.495E-03	.2846	8.413E-03	.3687	7.644E-03	.3350	5.370E-03
I	3R78(300)	12.31	11.39	6.180E-03	.2709	8.006E-03	.3509	7.274E-03	.3188	5.110E-03
>	5519(300)	12.31	11.39	6.180E-03	.2709	8.006E-03	.3509	7.274E-03	.3188	5.110E-03

NASA-RI OM 56 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-74 PAGE 2

V41H-R28 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

GRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REA	NED
104	11	TRIP					.110	0	9.311E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.5	1297	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SINEF (W= .040 FT)
94.4	.044	1.975	3794	3.93E-05	7.594E-08	1.56ME 06	2.282E-02	1.921E-02

CAMERA (OF/T) >ICE(S) >6	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TRANS(TO)	BETA(TO)
	437					
	394	300	87	.0638	2.842E-01	3.2790E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.910)	H(.910TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3879(300)	13.39	12.44	5.907E-03	.2589	7.653E-03	.3354	6.953E-03	.3047	4.885E-03
5	5520(300)	13.39	12.44	5.907E-03	.2589	7.653E-03	.3354	6.953E-03	.3047	4.885E-03
1	3880(300)	14.47	13.54	5.668E-03	.2484	7.342E-03	.3218	6.671E-03	.2923	4.687E-03
5	5521(300)	14.47	13.54	5.668E-03	.2484	7.342E-03	.3218	6.671E-03	.2923	4.687E-03
1	3881(300)	15.54	14.62	5.455E-03	.2391	7.067E-03	.3097	6.420E-03	.2814	4.511E-03
5	5522(300)	15.54	14.62	5.455E-03	.2391	7.067E-03	.3097	6.420E-03	.2814	4.511E-03
1	3882(300)	16.62	15.69	5.265E-03	.2307	6.820E-03	.2989	6.196E-03	.2716	4.353E-03
5	5523(300)	16.62	15.69	5.265E-03	.2307	6.820E-03	.2989	6.196E-03	.2716	4.353E-03
1	3883(300)	17.70	16.77	5.093E-03	.2232	6.597E-03	.2891	5.994E-03	.2627	4.211E-03
5	5524(300)	17.70	16.77	5.093E-03	.2232	6.597E-03	.2891	5.994E-03	.2627	4.211E-03
1	3884(300)	18.77	17.84	4.937E-03	.2164	6.395E-03	.2803	5.810E-03	.2547	4.082E-03
5	5525(300)	18.77	17.84	4.937E-03	.2164	6.395E-03	.2803	5.810E-03	.2547	4.082E-03
1	3885(300)	19.85	18.92	4.744E-03	.2101	6.211E-03	.2722	5.643E-03	.2473	3.944E-03
5	5526(300)	19.85	18.92	4.744E-03	.2101	6.211E-03	.2722	5.643E-03	.2473	3.944E-03
1	3886(300)	20.92	20.00	4.604E-03	.2044	6.041E-03	.2648	5.489E-03	.2406	3.856E-03
5	5527(300)	20.92	20.00	4.604E-03	.2044	6.041E-03	.2648	5.489E-03	.2406	3.856E-03
1	3887(300)	22.00	21.07	4.543E-03	.1991	5.845E-03	.2579	5.347E-03	.2343	3.757E-03
5	5528(300)	22.00	21.07	4.543E-03	.1991	5.845E-03	.2579	5.347E-03	.2343	3.757E-03
1	3888(300)	23.08	22.15	4.431E-03	.1942	5.740E-03	.2516	5.215E-03	.2286	3.664E-03
5	5529(300)	23.0	22.15	4.431E-03	.1942	5.740E-03	.2516	5.215E-03	.2286	3.664E-03
1	3889(300)	24.15	23.23	4.327E-03	.1897	5.606E-03	.2457	5.093E-03	.2232	3.578E-03
5	5530(300)	24.15	23.23	4.327E-03	.1897	5.606E-03	.2457	5.093E-03	.2232	3.578E-03
1	3890(300)	25.23	24.30	4.230E-03	.1854	5.480E-03	.2402	4.979E-03	.2182	3.498E-03
5	5531(300)	25.23	24.30	4.230E-03	.1854	5.480E-03	.2402	4.979E-03	.2182	3.498E-03
1	3891(300)	26.31	25.38	4.140E-03	.1814	5.363E-03	.2350	4.872E-03	.2135	3.423E-03
5	5532(300)	26.31	25.38	4.140E-03	.1814	5.363E-03	.2350	4.872E-03	.2135	3.423E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	LOCATION/SIZE X/L	DIA.	REX	RED
104	11	TRIP					.110	0	9.311E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	425.5	1297	39.98	-9.98	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RN .060 FT)	STREF (RN .060 FT)
94.4	.044	1.475	3799	3.338E-05	7.593E-08	1.568E 06	2.282E-02	1.921E-02

LAPFSA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SUDARF ROOT (RHGCAGA)	TRAR(TO)	BETA(TO)
104(1)	.37					
SICE(S)	394	300	87	.0034	2.842E-01	3.279E-01
36						

	MIC NO	TIME	DELTIME	M(TO)	M(TO)/HREF	M(.9TO)	M(.9TO)/HREF	M(.934TO)	M(.934TO)/HREF	ST(TO)
I	3892(300)	27.36	26.69	4.057E-03	.1778	5.255E-03	.2303	4.774E-03	.2092	3.354E-03
S	5533(300)	27.36	26.69	4.057E-03	.1778	5.255E-03	.2303	4.774E-03	.2092	3.354E-03
I	3893(300)	28.06	27.59	3.975E-03	.1742	5.149E-03	.2257	4.678E-03	.2050	3.287E-03
S	5534(300)	28.06	27.59	3.975E-03	.1742	5.149E-03	.2257	4.678E-03	.2050	3.287E-03
I	3894(300)	29.53	28.81	3.899E-03	.1709	5.051E-03	.2214	4.584E-03	.2011	3.224E-03
S	5535(300)	29.53	28.81	3.899E-03	.1709	5.051E-03	.2214	4.584E-03	.2011	3.224E-03
I	3895(300)	30.81	29.68	3.842E-03	.1678	4.958E-03	.2173	4.505E-03	.1974	3.165E-03
S	5536(300)	30.81	29.68	3.842E-03	.1678	4.958E-03	.2173	4.505E-03	.1974	3.165E-03
I	3896(300)	31.69	30.74	3.760E-03	.1648	4.871E-03	.2135	4.426E-03	.1940	3.109E-03
S	5537(300)	31.69	30.74	3.760E-03	.1648	4.871E-03	.2135	4.426E-03	.1940	3.109E-03
I	3897(300)	32.74	31.81	3.698E-03	.1621	4.798E-03	.2099	4.352E-03	.1907	3.057E-03
S	5538(300)	32.74	31.81	3.698E-03	.1621	4.798E-03	.2099	4.352E-03	.1907	3.057E-03
		33.16		MODEL HAS LEFT CENTERLINE						
I	3898(300)	33.81	32.88	3.637E-03	.1594	4.711E-03	.2065	4.280E-03	.1876	3.007E-03
S	5539(300)	33.81	32.88	3.637E-03	.1594	4.711E-03	.2065	4.280E-03	.1876	3.007E-03
I	3899(300)	34.69	33.94	3.578E-03	.1568	4.636E-03	.2032	4.212E-03	.1846	2.959E-03
S	5540(300)	34.69	33.94	3.578E-03	.1568	4.636E-03	.2032	4.212E-03	.1846	2.959E-03
I	3900(300)	35.69	35.04	3.522E-03	.1544	4.562E-03	.2000	4.145E-03	.1817	2.912E-03
S	5541(300)	35.69	35.04	3.522E-03	.1544	4.562E-03	.2000	4.145E-03	.1817	2.912E-03
I	3901(300)	37.04	36.12	3.470E-03	.1521	4.495E-03	.1970	4.084E-03	.1790	2.869E-03
S	5542(300)	37.04	36.12	3.470E-03	.1521	4.495E-03	.1970	4.084E-03	.1790	2.869E-03
I	3902(300)	38.12	37.19	3.420E-03	.1499	4.430E-03	.1941	4.025E-03	.1764	2.828E-03
S	5543(300)	38.14	37.22	3.418E-03	.1498	4.428E-03	.1941	4.023E-03	.1763	2.827E-03
I	3903(300)	39.22	38.29	3.370E-03	.1477	4.366E-03	.1913	3.966E-03	.1738	2.787E-03
S	5544(300)	39.22	38.29	3.370E-03	.1477	4.366E-03	.1913	3.966E-03	.1738	2.787E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
104	11	TRIP					.110	0	9.311E 05	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.5	1297	34.98	-9.98	30.06	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HR .040 FT)	STREF (HR .040 FT)
94.4	.044	1.975	3799	3.93EE-08	7.594E-08	1.56RE 04	2.2R2E-02	1.921E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	THAW(TO)	META(TO)
10F(T)	437					
SICE(S)	394	300	RT	.0636	2.842E-01	3.2790E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	3504(300)	40.20	39.37	3.324E-03	.1457	4.306E-03	.1887	3.912E-03	.1714	2.748E-03
2	5545(300)	40.20	39.37	3.324E-03	.1457	4.306E-03	.1887	3.912E-03	.1714	2.748E-03
1	3505(300)	41.37	40.65	3.279E-03	.1437	4.248E-03	.1862	3.859E-03	.1691	2.712E-03
2	5546(300)	41.37	40.65	3.279E-03	.1437	4.248E-03	.1862	3.859E-03	.1691	2.712E-03

L37

Gp '05

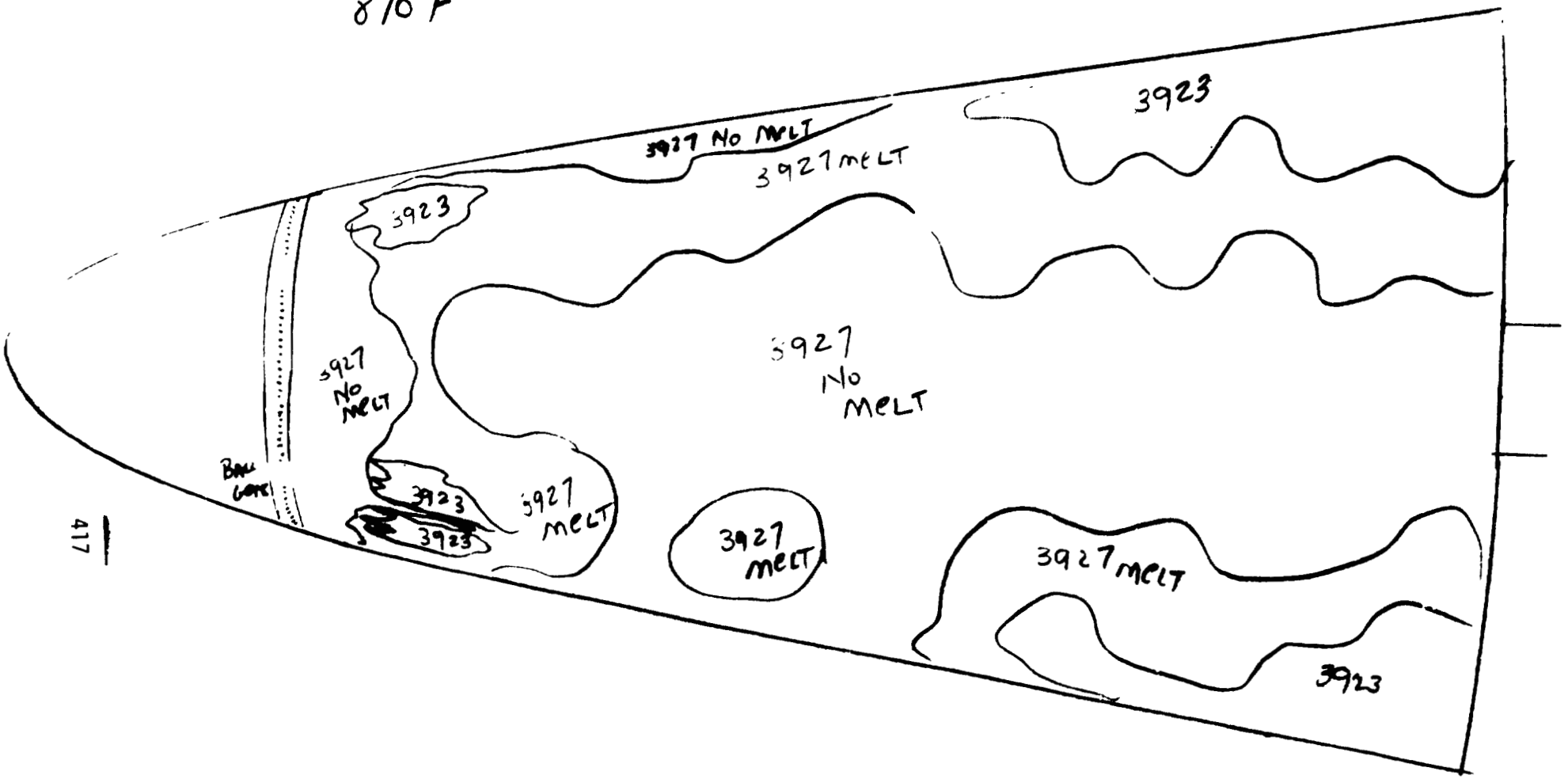
735 PSIA

870°F

$\alpha = 20°$

$T_R = 350°F$

3910 ℄



WRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
105	11	TRIP				S	.110	.031	1.547E 06	8.458E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMENU	ROLL-MODEL	YAW
8.00	733.9	1323	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STHEF (W= .040 FT)
95.5	.675	3.368	3838	6.576E-05	7.719E-08	3.271E 06	2.490E-02	1.489E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACAR)	TRAN(TO)	BETA(TO)
104(T)	437					
>IGE(S)	396	350	87	.4659	3.389E-01	4.1654E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3507(350)	.05		MODEL HAS NOT REACHED CENTERLINE						
>	5548(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
I	3508(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
>	5549(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.68								
I	3509(350)	2.60	1.78	2.081E-02	.6958	2.742E-02	.9169	2.812E-02	.9404	1.015E-02
>	5550(350)	2.60	1.78	2.081E-02	.6958	2.742E-02	.9169	2.812E-02	.9404	1.015E-02
I	3510(350)	3.68	2.78	1.629E-02	.5447	2.146E-02	.7178	2.201E-02	.7362	7.947E-03
>	5551(350)	3.68	2.78	1.629E-02	.5447	2.146E-02	.7178	2.201E-02	.7362	7.947E-03
>6		3.93								
I	3511(350)	4.73	3.83	1.388E-02	.4640	1.828E-02	.6115	1.874E-02	.6271	6.770E-03
>	5552(350)	4.74	3.84	1.383E-02	.4625	1.822E-02	.6095	1.869E-02	.6250	6.748E-03
I	3512(350)	5.83	4.93	1.223E-02	.4090	1.611E-02	.5389	1.653E-02	.5527	5.966E-03
>	5553(350)	5.83	4.93	1.223E-02	.4090	1.611E-02	.5389	1.653E-02	.5527	5.966E-03
I	3513(350)	6.91	6.01	1.108E-02	.3705	1.460E-02	.4883	1.497E-02	.5007	5.406E-03
>	5554(350)	6.91	6.01	1.108E-02	.3705	1.460E-02	.4883	1.497E-02	.5007	5.406E-03
I	3514(350)	7.98	7.08	1.020E-02	.3412	1.345E-02	.4496	1.379E-02	.4611	4.978E-03
>	5555(350)	7.98	7.08	1.020E-02	.3412	1.345E-02	.4496	1.379E-02	.4611	4.978E-03
I	3515(350)	9.06	8.16	9.507E-03	.3179	1.253E-02	.4190	1.285E-02	.4297	4.638E-03
>	5556(350)	9.06	8.16	9.507E-03	.3179	1.253E-02	.4190	1.285E-02	.4297	4.638E-03
I	3516(350)	10.14	9.24	8.936E-03	.2988	1.177E-02	.3938	1.208E-02	.4038	4.360E-03
>	5557(350)	10.14	9.24	8.936E-03	.2988	1.177E-02	.3938	1.208E-02	.4038	4.360E-03
I	3517(350)	11.21	10.31	8.457E-03	.2828	1.114E-02	.3727	1.143E-02	.3822	4.126E-03
>	5558(350)	11.24	10.34	8.446E-03	.2825	1.113E-02	.3722	1.141E-02	.3817	4.121E-03
I	3518(350)	12.31	11.41	8.038E-03	.2688	1.059E-02	.3542	1.086E-02	.3633	3.922E-03
>	5559(350)	12.31	11.41	8.038E-03	.2688	1.059E-02	.3542	1.086E-02	.3633	3.922E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REH	MEO
105	11	TRIP				S	.110	.031	1.547E 06	8.450E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
4.00	733.9	1323	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
95.9	.675	3.348	3838	6.57EF-05	7.71VE-08	3.271E 06	2.990E-02	1.489E-02

LAPFFA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (WHCACAR)	TRAN(TO)	RETA(TO)
IDF(I)	437					
SICE(S)	394	350	87	.0652	3.3H9E-01	4.1656E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
I	3519(350)	13.37	12.47	7.6+2E-03	.2572	1.014E-02	.3390	1.034E-02	.3476	3.753E-03
S	5560(350)	13.37	12.47	7.6+2E-03	.2572	1.014E-02	.3390	1.034E-02	.3476	3.753E-03
I	3520(350)	14.44	13.54	7.3e0E-03	.2468	9.725E-03	.3252	9.973E-03	.3335	3.681E-03
S	5561(350)	14.44	13.54	7.3H0E-03	.2468	9.725E-03	.3252	9.973E-03	.3335	3.681E-03
I	3521(350)	15.54	14.64	7.047E-03	.2373	9.352E-03	.3128	9.591E-03	.3208	3.463E-03
S	5562(350)	15.54	14.64	7.047E-03	.2373	9.352E-03	.3128	9.591E-03	.3208	3.463E-03
I	3522(350)	16.62	15.72	6.850E-03	.2291	9.026E-03	.3019	9.257E-03	.3096	3.342E-03
S	5563(350)	16.62	15.72	6.850E-03	.2291	9.026E-03	.3019	9.257E-03	.3096	3.342E-03
I	3523(350)	17.70	16.8A	6.627E-03	.2216	8.732E-03	.2920	8.955E-03	.2995	3.233E-03
S	5564(350)	17.70	16.8A	6.627E-03	.2216	8.732E-03	.2920	8.955E-03	.2995	3.233E-03
I	3524(350)	18.75	17.8A	6.429E-03	.2150	8.471E-03	.2833	8.68HE-03	.2905	3.137E-03
S	5565(350)	18.77	17.87	6.4c4E-03	.2148	8.465E-03	.2831	8.681E-03	.2903	3.136E-03
I	3525(350)	19.85	18.9c	6.239E-03	.2087	8.221E-03	.2749	8.431E-03	.2820	3.044E-03
S	5566(350)	19.85	1-.9c	6.239E-03	.2087	8.221E-03	.2749	8.431E-03	.2820	3.044E-03
I	3526(350)	20.92	20.02	6.069E-03	.2030	7.997E-03	.2675	8.202E-03	.2743	2.961E-03
S	5567(350)	20.92	20.02	6.069E-03	.2030	7.997E-03	.2675	8.202E-03	.2743	2.961E-03
		21.12		MODEL HAS LEFT CENTERLINE						
I	3527(350)	21.98	21.0A	5.916E-03	.1978	7.795E-03	.2607	7.994E-03	.2674	2.886E-03
S	5568(350)	22.00	21.1-	5.912E-03	.1977	7.791E-03	.2605	7.990E-03	.2672	2.885E-03
I	3528(350)	23.05	22.1c	5.770E-03	.1930	7.604E-03	.2543	7.798E-03	.2608	2.815E-03
S	5569(350)	23.05	22.1c	5.770E-03	.1930	7.604E-03	.2543	7.798E-03	.2608	2.815E-03
I	3529(350)	24.13	23.23	5.635E-03	.1885	7.425E-03	.2483	7.615E-03	.2547	2.749E-03
S	5570(350)	24.13	23.23	5.635E-03	.1885	7.425E-03	.2483	7.615E-03	.2547	2.749E-03
I	3530(350)	25.23	24.33	5.506E-03	.1841	7.255E-03	.2426	7.441E-03	.2488	2.686E-03
S	5571(350)	25.23	24.33	5.506E-03	.1841	7.255E-03	.2426	7.441E-03	.2488	2.686E-03

GRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
105	11	TRIP				5	.110	.031	1.547E 06	8.450E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
8.00	733.9	1323	20.00	10.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .060 FT)	SIREF (H= .060 FT)
95.8	.275	3.348	3838	4.578E-05	7.719E-08	3.271E 06	2.990E-02	1.489E-02

CAMERA (OF(T))	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	TRAR(TO)	BETA(TO)
	437					
>ICK(S)	394	350	87	.0659	3.389E-01	4.1454E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
4	3631(350)	26.31	25.41	5.388E-03	.1802	7.100E-03	.2374	7.281E-03	.2435	2.629E-03
5	5972(350)	26.31	25.41	5.388E-03	.1802	7.100E-03	.2374	7.281E-03	.2435	2.629E-03

C

437

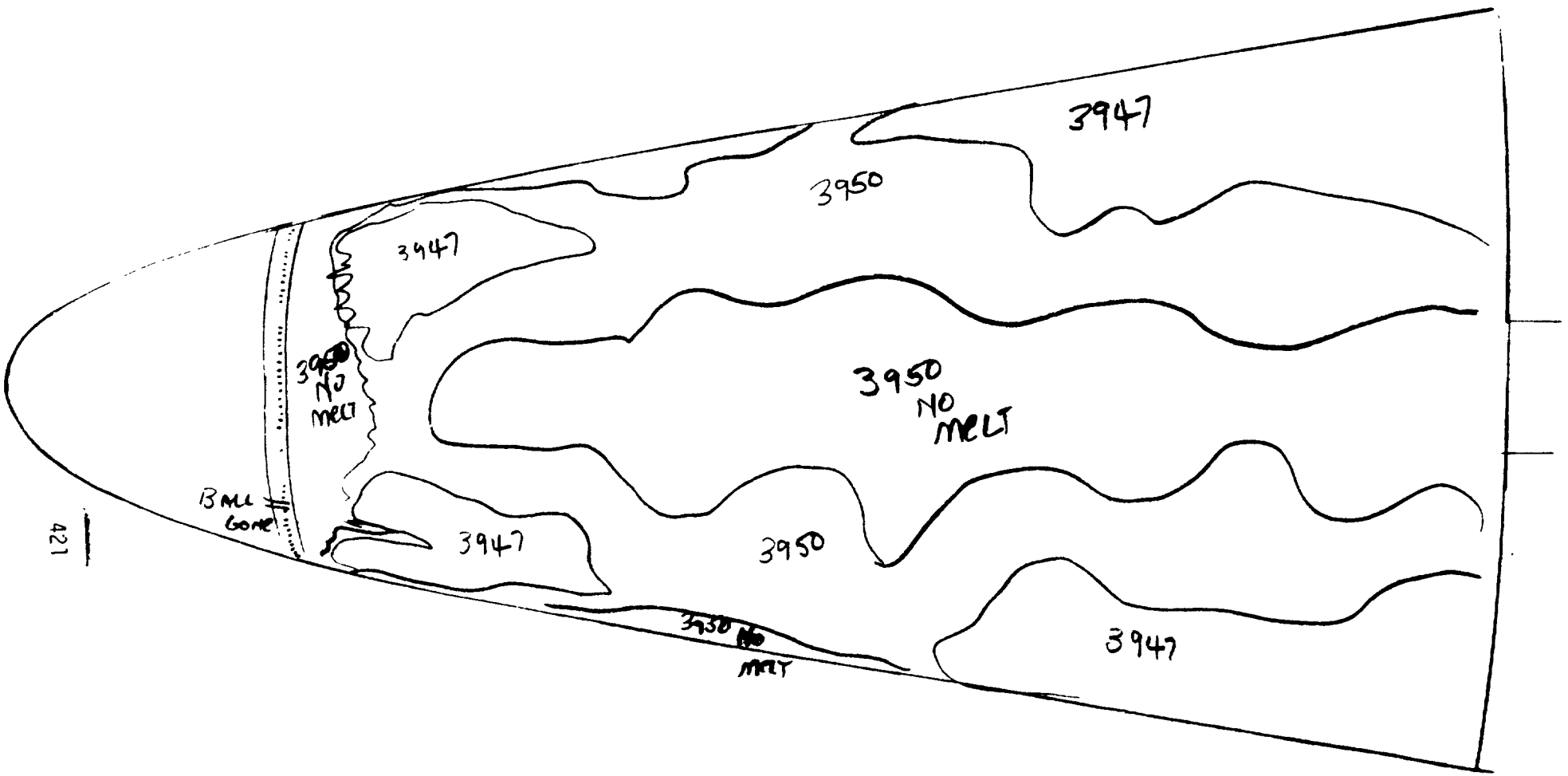
G2106 $T_{PC} = 350°F$

$\alpha = 29°$

3936 ℄

800 PSIA

875°F



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V41A-B24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
104	11	TRIP				S	.110	.071	1.670E 06	9.122E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	800.6	1332	19.97	18.03	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
96.6	.082	3.674	3852	7.126E-05	7.774E-06	3.531E 06	3.127E-02	1.432E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TBAR(TO)	BETA(TO)
IOF(T)	.37					
>ICE(S)	396	350	87	.0652	3.348E-01	4.0956E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
<	3933(35P)	.50		MODEL HAS NOT REACHED CENTERLINE						
>	5876(35P)	.50		MODEL HAS NOT REACHED CENTERLINE						
<	3934(35P)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5875(35P)	1.55		MODEL HAS NOT REACHED CENTERLINE						
IN.FCT TIME =		1.63								
<	3935(35P)	2.03	1.71	2.039E-02	.6521	2.678E-02	.8565	2.746E-02	.8782	9.148E-03
>	5876(35P)	2.03	1.71	2.039E-02	.6521	2.678E-02	.8565	2.746E-02	.8782	9.149E-03
<	3936(35P)	3.70	2.79	1.598E-02	.5112	2.099E-02	.6713	2.152E-02	.6883	7.170E-03
>	5877(35P)	3.70	2.79	1.598E-02	.5112	2.099E-02	.6713	2.152E-02	.6883	7.170E-03
>6		3.95								
<	3937(35P)	4.61	3.88	1.354E-02	.4328	1.778E-02	.5685	1.823E-02	.5829	6.072E-03
>	5878(35P)	4.61	3.88	1.354E-02	.4328	1.778E-02	.5685	1.823E-02	.5829	6.072E-03
<	3938(35P)	5.66	4.94	1.201E-02	.3841	1.577E-02	.5044	1.617E-02	.5172	5.388E-03
>	5879(35P)	5.66	4.94	1.201E-02	.3841	1.577E-02	.5044	1.617E-02	.5172	5.388E-03
<	3939(35P)	6.66	6.04	1.066E-02	.3473	1.426E-02	.4562	1.463E-02	.4677	4.872E-03
>	5880(35P)	6.66	6.04	1.066E-02	.3473	1.426E-02	.4562	1.463E-02	.4677	4.872E-03
<	3940(35P)	8.03	7.12	1.001E-02	.3200	1.314E-02	.4203	1.348E-02	.4309	4.489E-03
>	5881(35P)	8.03	7.12	1.001E-02	.3200	1.314E-02	.4203	1.348E-02	.4309	4.489E-03
<	3941(35P)	9.11	8.20	9.327E-03	.2983	1.225E-02	.3917	1.258E-02	.4016	4.184E-03
>	5882(35P)	9.11	8.20	9.327E-03	.2983	1.225E-02	.3917	1.258E-02	.4016	4.184E-03
<	3942(35P)	10.16	9.25	8.781E-03	.2808	1.153E-02	.3688	1.182E-02	.3781	3.939E-03
>	5883(35P)	10.19	9.27	8.769E-03	.2804	1.152E-02	.3683	1.181E-02	.3776	3.934E-03
<	3943(35P)	11.26	10.35	8.300E-03	.2654	1.090E-02	.3486	1.118E-02	.3575	3.723E-03
>	5884(35P)	11.26	10.35	8.300E-03	.2654	1.090E-02	.3486	1.118E-02	.3575	3.723E-03
<	3944(35P)	12.34	11.43	7.900E-03	.2526	1.038E-02	.3318	1.064E-02	.3402	3.544E-03
>	5885(35P)	12.34	11.43	7.900E-03	.2526	1.038E-02	.3318	1.064E-02	.3402	3.544E-03

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
186	11	TRIP				S	.110	.031	1.670E 06	9.122E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
8.00	800.6	1332	19.97	19.83	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
96.6	.092	3.676	3852	7.126E-05	7.774E-08	3.531E 06	3.127E-02	1.432E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKR)	TBAR(TO)	BETA(TO)
IOF(T)	437					
>IOF(S)	396	350	87	.0652	3.348E-01	4.0456E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.89210)	H(.89210)/HREF	ST(TO)
I	3565(35A)	13.42	12.5A	7.552E-03	.2415	9.919E-03	.3172	1.017E-02	.3252	3.38AE-03
>	5586(35A)	13.42	12.5A	7.552E-03	.2415	9.919E-03	.3172	1.017E-02	.3252	3.38AE-03
I	3566(35A)	14.49	13.5A	7.247E-03	.2317	9.518E-03	.3044	9.759E-03	.3121	3.251E-03
>	5587(35A)	14.49	13.5A	7.247E-03	.2317	9.518E-03	.3044	9.759E-03	.3121	3.251E-03
I	3567(35A)	15.57	14.6E	6.975E-03	.2231	9.161E-03	.2930	9.393E-03	.3004	3.129E-03
>	5588(35A)	15.57	14.6E	6.975E-03	.2231	9.161E-03	.2930	9.393E-03	.3004	3.129E-03
		16.49		MODEL WAS LEFT CENTERLINE						
I	3568(35A)	16.64	15.73	6.733E-03	.2153	8.842E-03	.2828	9.066E-03	.2899	3.020E-03
>	5589(35A)	16.64	15.73	6.733E-03	.2153	8.842E-03	.2828	9.066E-03	.2899	3.020E-03
I	3569(35A)	17.72	16.81	6.514E-03	.2083	8.555E-03	.2736	8.771E-03	.2805	2.922E-03
>	5590(35A)	17.72	16.81	6.514E-03	.2083	8.555E-03	.2736	8.771E-03	.2805	2.922E-03
I	3591(35A)	18.80	17.88	6.314E-03	.2019	8.293E-03	.2652	8.503E-03	.2719	2.833E-03
>	5591(35A)	18.80	17.88	6.314E-03	.2019	8.293E-03	.2652	8.503E-03	.2719	2.833E-03
I	3551(35A)	19.87	18.96	6.133E-03	.1961	8.054E-03	.2576	8.258E-03	.2641	2.751E-03
>	5592(35A)	19.87	18.96	6.133E-03	.1961	8.054E-03	.2576	8.258E-03	.2641	2.751E-03
I	3552(35A)	20.95	20.04	5.966E-03	.1908	7.835E-03	.2506	8.034E-03	.2569	2.676E-03
>	5593(35A)	20.95	20.04	5.966E-03	.1908	7.835E-03	.2506	8.034E-03	.2569	2.676E-03

437

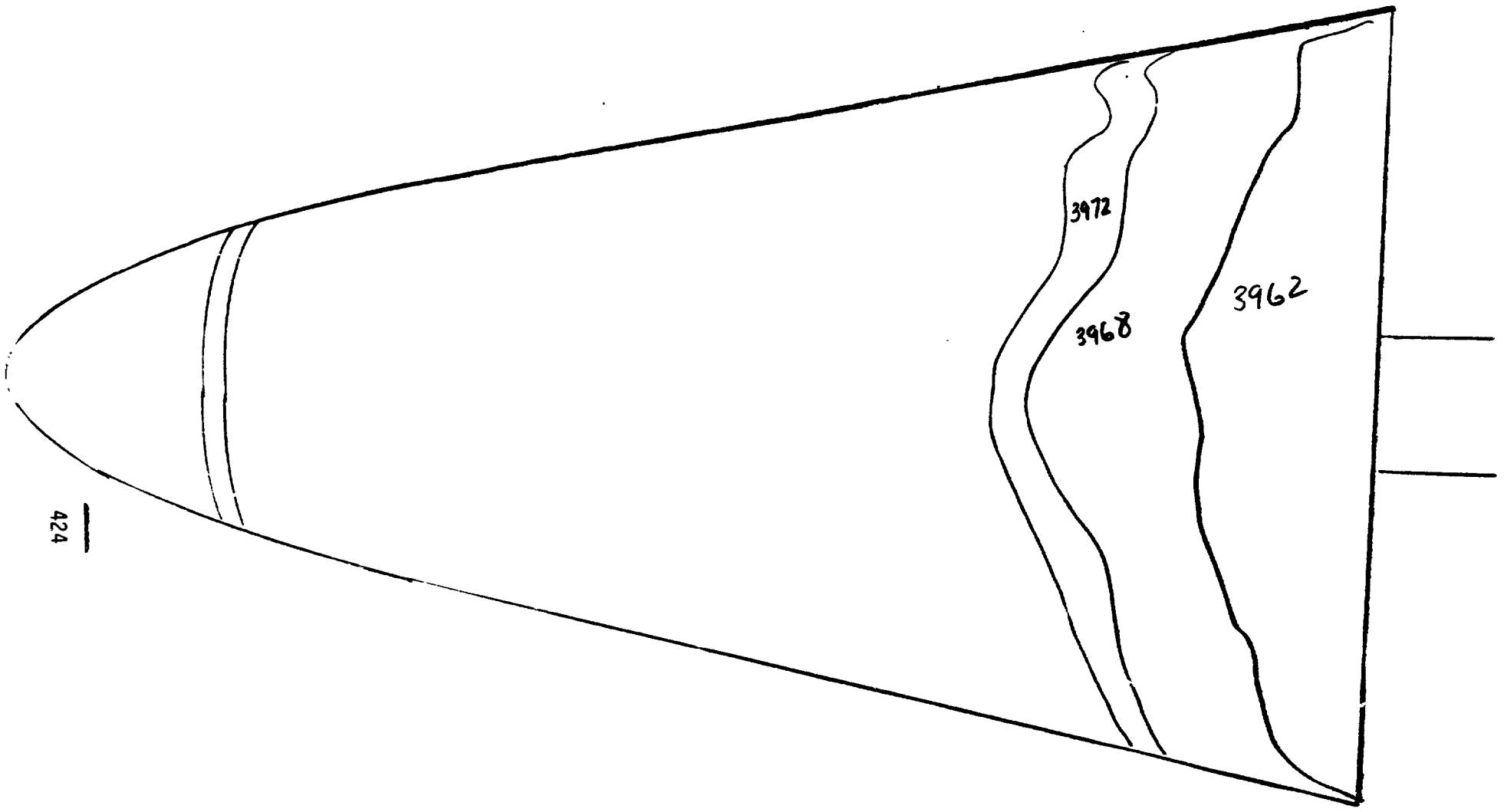
GP 107

800 PSIA
875°F

$\alpha = 30°$

$T_{PC} = 350°F$

3957 ℄



NASA-HI OH 54

V41H-R2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

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GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
107	11	TRIP					.110	0	1.674E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREBEND	ROLL-MODEL	YAW
8.00	800.9	1331	30.91	-.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (FT/SEC)	V-INF	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
96.4	.0872	3.675	3850	7.137E-05	7.765E-08	3.538E 06	3.127E-02	1.431E-02

LAPEFA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRAR(TO)	HETA(TO)
10F(T)	437					
3ICE(S)	394	350	86	.0652	3.363E-01	4.1213E-01
36						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
I	3954(350)	.08		MODEL HAS NOT REACHED CENTERLINE						
>	5595(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	3955(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5596(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	3956(350)	2.63	1.70	2.081E-02	.6569	2.708E-02	.8659	2.606E-02	.8332	9.235E-03
>	5597(350)	2.63	1.70	2.081E-02	.6569	2.708E-02	.8659	2.606E-02	.8332	9.235E-03
I	3957(350)	3.70	2.70	1.613E-02	.5157	2.119E-02	.6776	2.034E-02	.6521	7.227E-03
>	5598(350)	3.70	2.70	1.613E-02	.5157	2.119E-02	.6776	2.034E-02	.6521	7.227E-03
36		3.95								
I	3958(350)	4.78	3.85	1.369E-02	.4378	1.799E-02	.5753	1.731E-02	.5536	6.135E-03
>	5599(350)	4.78	3.85	1.369E-02	.4378	1.799E-02	.5753	1.731E-02	.5536	6.135E-03
I	3959(350)	5.86	4.93	1.210E-02	.3870	1.590E-02	.5086	1.530E-02	.4894	5.424E-03
>	5600(350)	5.86	4.93	1.210E-02	.3870	1.590E-02	.5086	1.530E-02	.4894	5.424E-03
I	3960(350)	6.93	6.01	1.096E-02	.3507	1.441E-02	.4608	1.387E-02	.4434	4.914E-03
>	5601(350)	6.93	6.01	1.096E-02	.3507	1.441E-02	.4608	1.387E-02	.4434	4.914E-03
I	3961(350)	8.01	7.08	1.010E-02	.3229	1.327E-02	.4243	1.277E-02	.4083	4.526E-03
>	5602(350)	8.03	7.11	1.000E-02	.3223	1.325E-02	.4236	1.275E-02	.4076	4.518E-03
I	3962(350)	9.11	8.18	9.343E-03	.3004	1.234E-02	.3947	1.188E-02	.3799	4.210E-03
>	5603(350)	9.11	8.18	9.343E-03	.3004	1.[illegible]E-02	.3947	1.188E-02	.3799	4.210E-03
>	5604(350)	10.16	9.23	8.863E-03	.2848	1.[illegible]E-02	.3716	1.118E-02	.3576	3.963E-03
I	3963(350)	10.19	9.26	8.831E-03	.2824	1.[illegible]E-02	.3711	1.117E-02	.3571	3.958E-03
I	3964(350)	11.26	10.34	8.358E-03	.2673	1.[illegible]E-02	.3512	1.057E-02	.3380	3.746E-03
>	5605(350)	11.26	10.34	8.358E-03	.2673	1.[illegible]E-02	.3512	1.057E-02	.3380	3.746E-03
I	3965(350)	12.34	11.41	7.956E-03	.2544	1.[illegible]E-02	.3343	1.006E-02	.3217	3.565E-03
>	5606(350)	12.34	11.41	7.956E-03	.2544	1.[illegible]E-02	.3343	1.006E-02	.3217	3.565E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RES	NEW
107	11	TWIN					.110	0	1.674E 06	0

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PHEBEND	ROLL-MODEL	YAW
8.00	800.0	1331	30.01	-.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (RE .040 FT)	STREF (RE .040 FT)
96.6	.0P2	3.675	3850	7.137E-05	7.765E-08	3.53AE 06	3.127E-02	1.631E-02

CAPEKA (OF(T) >ICE(S) >6	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAR)	TBAR(TO)	HETA(TO)
	437					
	396	350	96	.0692	3.363E-01	6.1213E-01

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.912TO)	H(.912TO)/HREF	ST(TO)
1	3966(350)	14.42	12.60	7.6[illegible]E-03	.2632	9.992E-03	.3195	9.615E-03	.3075	3.408E-03
>	5607(350)	14.42	12.60	7.6[illegible]E-03	.2632	9.992E-03	.3195	9.615E-03	.3075	3.408E-03
1	3967(350)	14.49	13.54	7.2[illegible]E-03	.2333	9.587E-03	.3066	9.225E-03	.2950	3.270E-03
>	5608(350)	14.49	13.54	7.2[illegible]E-03	.2333	9.587E-03	.3066	9.225E-03	.2950	3.270E-03
1	3968(350)	15.57	14.64	7.0[illegible]E-03	.2246	9.228E-03	.2951	8.680E-03	.2440	3.146E-03
>	5609(350)	15.57	14.64	7.0[illegible]E-03	.2246	9.228E-03	.2951	8.840E-03	.2440	3.146E-03
1	3969(350)	16.64	15.72	6.77[illegible]E-03	.2168	8.907E-03	.2848	8.571E-03	.2741	3.038E-03
>	5610(350)	16.64	15.72	6.77[illegible]E-03	.2168	8.907E-03	.2848	8.571E-03	.2741	3.038E-03
1	3970(350)	17.72	16.79	6.5[illegible]E-03	.2097	8.617E-03	.2756	8.292E-03	.2652	2.939E-03
>	5611(350)	17.72	16.79	6.5[illegible]E-03	.2097	8.617E-03	.2756	8.292E-03	.2652	2.939E-03
1	3971(350)	18.80	17.87	6.3[illegible]E-03	.2033	8.353E-03	.2671	8.038E-03	.2571	2.849E-03
>	5612(350)	18.80	17.87	6.3[illegible]E-03	.2033	8.353E-03	.2671	8.038E-03	.2571	2.849E-03
		19.72		MODEL #4 LEFT CENTERLINE						
1	3972(350)	19.87	18.95	6.173E-03	.1974	8.112E-03	.2594	7.806E-03	.2496	2.767E-03
>	5613(350)	19.87	18.95	6.173E-03	.1974	8.112E-03	.2594	7.806E-03	.2496	2.767E-03
1	3973(350)	20.97	20.05	6.0[illegible]2E-03	.1919	7.846E-03	.2507	7.584E-03	.2427	2.690E-03
>	5614(350)	20.97	20.05	6.0[illegible]2E-03	.1919	7.846E-03	.2507	7.584E-03	.2427	2.690E-03
1	3974(350)	22.03	21.10	5.8[illegible]E-03	.1871	7.687E-03	.2458	7.397E-03	.2366	2.622E-03
>	5615(350)	22.03	21.10	5.8[illegible]E-03	.1871	7.687E-03	.2458	7.397E-03	.2366	2.622E-03
1	3975(350)	23.10	22.17	5.7[illegible]E-03	.1825	7.498E-03	.2398	7.216E-03	.2308	2.558E-03
>	5616(350)	23.10	22.17	5.7[illegible]E-03	.1825	7.498E-03	.2398	7.216E-03	.2308	2.558E-03

437

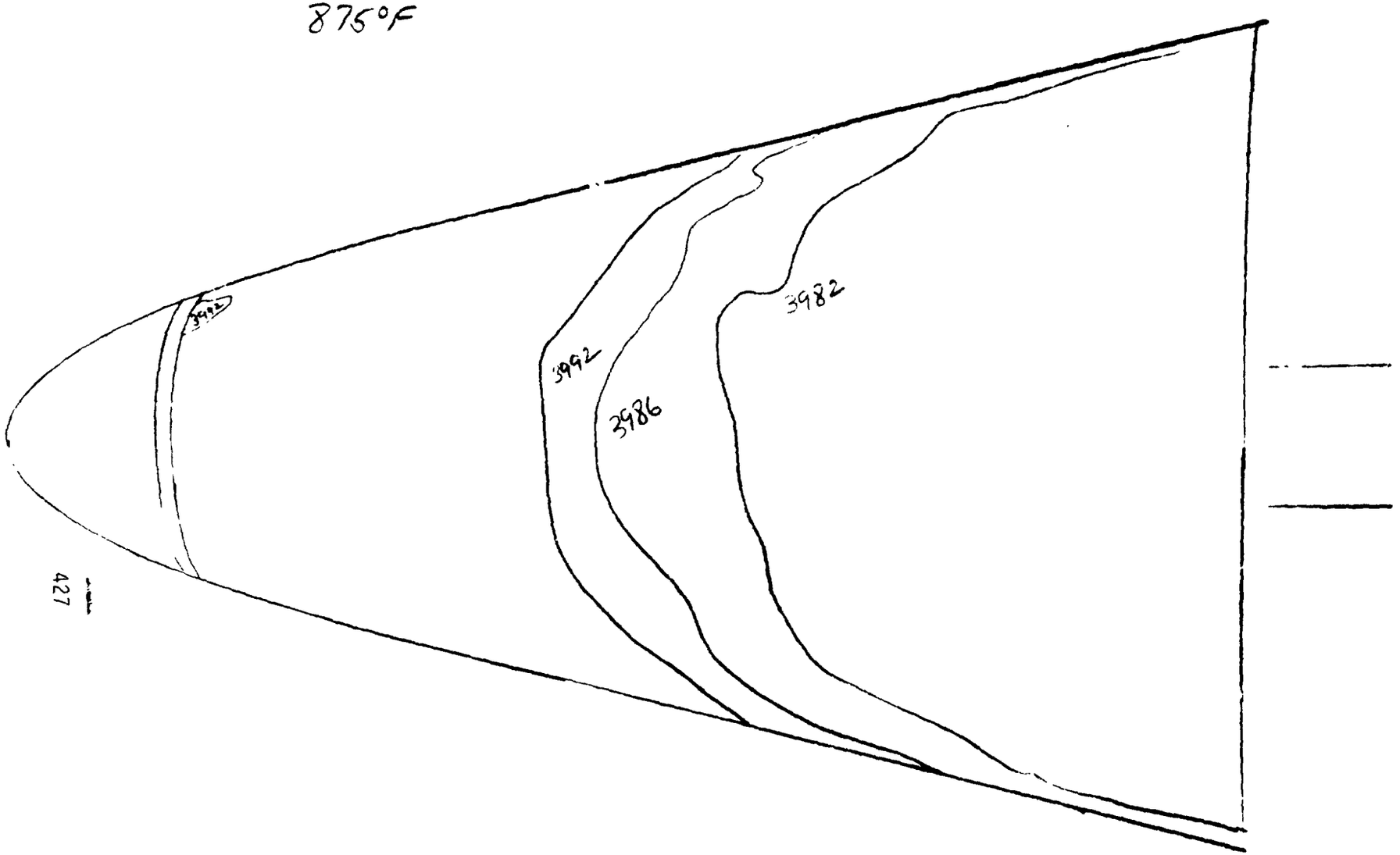
GP108

$T_R = 350°F$ $\alpha = 40°$

800 PSIA

875°F

3980 ℄



GROUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			THIP LOCATION/SIZE		HEB	HED
10A	11	TRIP	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
							.110	0	1.677E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	801.7	1330	39.99	-9.99	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RREF (R= .040 FT)	SIREF (R= .040 FT)
98.4	.082	3.675	3669	7.14EE-05	7.701E-08	3.545E 06	3.128E-02	1.429E-02

LAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RRHCACAR)	TRAN(TO)	BETA(TO)
>DF(S)	437					
>ICE(S)	396	350	47	.065P	3.358E-01	4.1121E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	3677(350)	.08		MODEL HAS NOT REACHED CENTERLINE						
>	5618(350)	.08		MODEL HAS NOT REACHED CENTERLINE						
I	3678(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5619(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	3679(350)	2.60	1.68	2.071E-02	.6621	2.722E-02	.8702	2.459E-02	.7859	9.272E-03
>	5620(350)	2.60	1.68	2.071E-02	.6621	2.722E-02	.8702	2.459E-02	.7859	9.272E-03
I	3680(350)	3.68	2.76	1.616E-02	.5167	2.124E-02	.6791	1.918E-02	.6133	7.235E-03
>	5621(350)	3.68	2.76	1.616E-02	.5167	2.124E-02	.6791	1.918E-02	.6133	7.235E-03
>G			3.93							
I	3681(350)	4.76	3.84	1.370E-02	.4380	1.801E-02	.5757	1.627E-02	.5200	6.134E-03
>	5622(350)	4.76	3.84	1.370E-02	.4380	1.801E-02	.5757	1.627E-02	.5200	6.134E-03
I	3682(350)	5.83	4.90	1.211E-02	.3870	1.591E-02	.5087	1.437E-02	.4594	5.420E-03
>	5623(350)	5.83	4.90	1.211E-02	.3870	1.591E-02	.5087	1.437E-02	.4594	5.420E-03
I	3683(350)	6.91	5.98	1.096E-02	.3505	1.441E-02	.4606	1.301E-02	.4160	4.908E 03
>	5624(350)	6.91	5.98	1.096E-02	.3505	1.441E-02	.4606	1.301E-02	.4160	4.908E 03
I	3684(350)	7.98	7.06	1.009E-02	.3226	1.327E-02	.4240	1.198E-02	.3830	4.518E-03
>	5625(350)	7.98	7.06	1.009E-02	.3226	1.327E-02	.4240	1.198E-02	.3830	4.518E-03
I	3685(350)	9.09	8.16	9.378E-03	.3001	1.234E-02	.3944	1.114E-02	.3562	4.202E-03
>	5626(350)	9.09	8.16	9.378E-03	.3001	1.234E-02	.3944	1.114E-02	.3562	4.202E-03
I	3686(350)	10.14	9.21	8.835E-03	.2824	1.161E-02	.3712	1.044E-02	.3352	3.955E-03
>	5627(350)	10.14	9.21	8.835E-03	.2824	1.161E-02	.3712	1.044E-02	.3352	3.955E-03
I	3687(350)	11.21	10.29	8.360E-03	.2672	1.099E-02	.3512	9.923E-03	.3172	3.742E-03
>	5628(350)	11.24	10.31	8.360E-03	.2669	1.097E-02	.3508	9.911E-03	.3168	3.738E-03
I	3688(350)	12.31	11.39	7.965E-03	.2540	1.044E-02	.3339	9.431E-03	.3015	3.557E-03
>	5629(350)	12.31	11.39	7.965E-03	.2540	1.044E-02	.3338	9.431E-03	.3015	3.557E-03

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE			TRIP LOCATION/SIZE		REX	RED
			R/L	WIDTH	DEPTH	TYPE	R/L	DIA.	
10A	11	TRIP					.110	0	1.677E 06

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
8.00	801.7	1330	30.00	-0.00	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	SREF (IN .040 FT)
98.4	.082	3.675	3849	7.146E-05	7.761E-08	3.545E 04	3.128E-02	1.429E-02

LAMPBA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAR)	TRAR(TO)	BETA(TO)
10F(T)	437					
5ILF(S)	394	350	87	.0652	3.358E-01	4.1121E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	358(350)	13.39	12.44	7.545E-03	.2428	9.982E-03	.3191	9.015E-03	.2882	3.488E-03
>	5431(350)	13.39	12.44	7.545E-03	.2428	9.982E-03	.3191	9.015E-03	.2882	3.488E-03
I	359(350)	14.44	13.51	7.293E-03	.2331	9.586E-03	.3044	8.657E-03	.2767	3.265E-03
>	5431(350)	14.44	13.51	7.293E-03	.2331	9.586E-03	.3044	8.657E-03	.2767	3.265E-03
I	359(350)	15.52	14.59	7.019E-03	.2244	9.225E-03	.2940	8.332E-03	.2663	3.142E-03
>	5432(350)	15.54	14.62	7.013E-03	.2242	9.218E-03	.2947	8.325E-03	.2661	3.139E-03
I	359(350)	16.62	15.65	6.788E-03	.2164	8.896E-03	.2844	8.034E-03	.2568	3.030E-03
>	5433(350)	16.62	15.65	6.788E-03	.2164	8.896E-03	.2844	8.034E-03	.2568	3.030E-03
I	359(350)	17.70	16.77	6.548E-03	.2093	8.606E-03	.2751	7.772E-03	.2484	2.931E-03
>	5434(350)	17.70	16.77	6.548E-03	.2093	8.606E-03	.2751	7.772E-03	.2484	2.931E-03
		17.67		MODEL WAS LEFT CENTERLINE						
I	359(350)	18.75	17.82	6.351E-03	.2030	8.348E-03	.2669	7.539E-03	.2410	2.843E-03
>	5435(350)	18.75	17.82	6.351E-03	.2030	8.348E-03	.2669	7.539E-03	.2410	2.843E-03
I	359(350)	19.82	18.90	6.108E-03	.1972	8.107E-03	.2591	7.321E-03	.2340	2.761E-03
>	5436(350)	19.82	18.90	6.108E-03	.1972	8.107E-03	.2591	7.321E-03	.2340	2.761E-03
I	359(350)	20.92	20.00	5.946E-03	.1917	7.886E-03	.2519	7.117E-03	.2275	2.684E-03
>	5437(350)	20.92	20.00	5.946E-03	.1917	7.886E-03	.2519	7.117E-03	.2275	2.684E-03
I	359(350)	22.00	21.07	5.841E-03	.1867	7.676E-03	.2454	6.933E-03	.2216	2.615E-03
>	5438(350)	22.00	21.07	5.841E-03	.1867	7.676E-03	.2454	6.933E-03	.2216	2.615E-03
I	359(350)	23.05	22.12	5.700E-03	.1822	7.492E-03	.2395	6.766E-03	.2163	2.552E-03
>	5439(350)	23.05	22.12	5.700E-03	.1822	7.492E-03	.2395	6.766E-03	.2163	2.552E-03

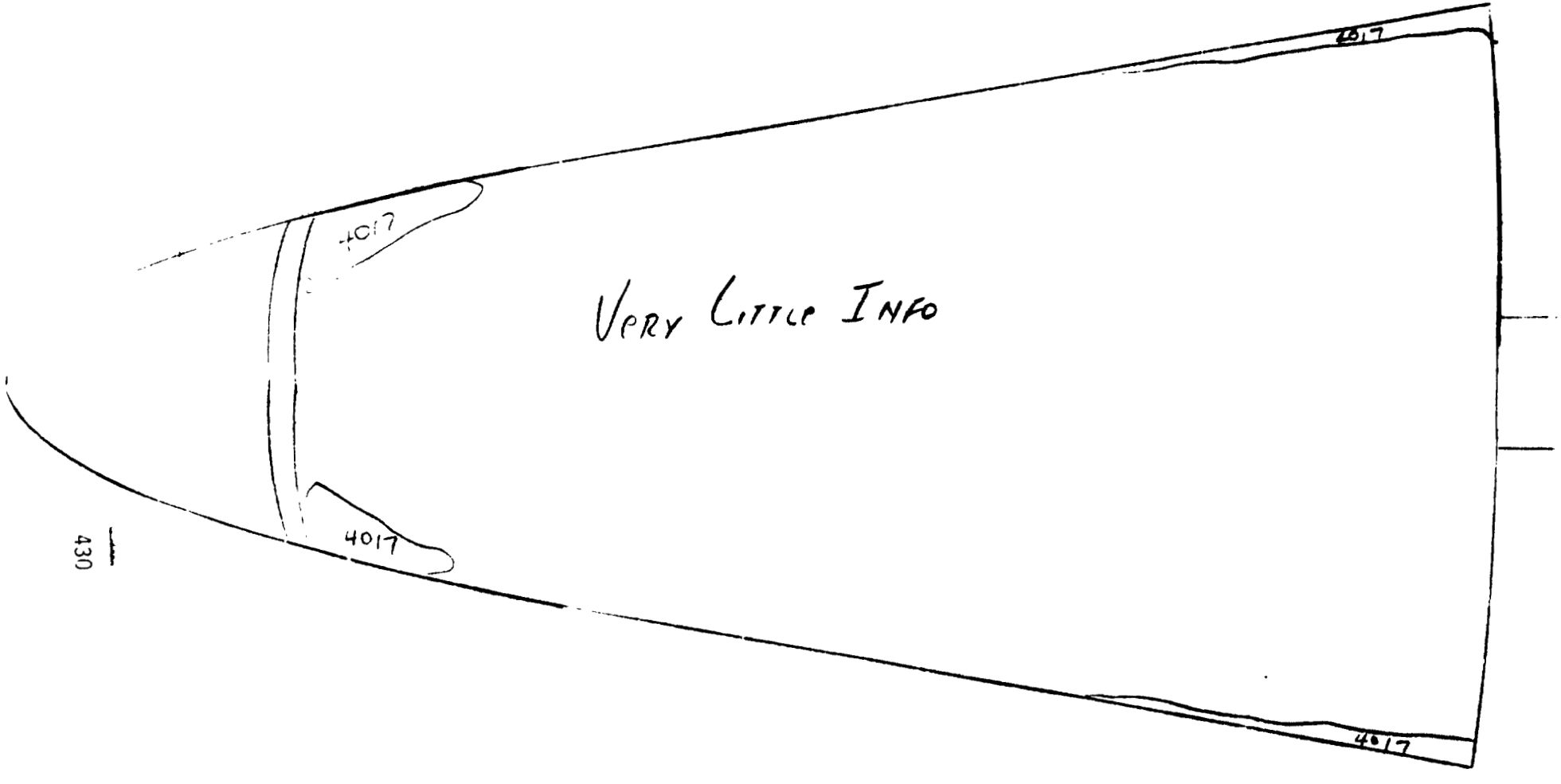
437

GP 109

800PSIA
875°F

$T_R = 275°F$
$\alpha = 20°$

4003℄



NASA-HI OH 54

V418-A2A

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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URCUR	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	HEB	REB
109	11	TRIP					.110	0	1.679E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
4.00	402.0	1329	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	STHEF
96.3	.082	3.660	3847	7.157E-05	7.754E-08	3.551E 05	(R= .040 FT) 3.128E-02	(R= .040 FT) 1.429E-02

LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAR)	TRAN(TO)	BETA(TO)
10P(1)	.37					
SILE(S)	394	275	87	.0627	2.404E-01	2.6462E-01
56						

	PIC NO	TIME	DELTIME	M(TO)	M(TO)/MREF	M(.9TO)	M(.9TO)/MREF	M(.892TO)	M(.892TO)/MREF	ST(TO)
1	4000(275)	.48		MODEL HAS NOT REACHED CENTERLINE						
5	5641(275)	.48		MODEL HAS NOT REACHED CENTERLINE						
1	4001(275)	1.55		MODEL HAS NOT REACHED CENTERLINE						
5	5642(275)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
1	4002(275)	2.63	1.71	1.267E-02	.4050	1.610E-02	.5146	1.645E-02	.5257	5.690E-03
5	5643(275)	2.63	1.71	1.267E-02	.4050	1.610E-02	.5146	1.645E-02	.5257	5.690E-03
1	4003(275)	3.70	2.79	9.931E-03	.3175	1.262E-02	.4033	1.289E-02	.4121	4.460E-03
5	5644(275)	3.70	2.79	9.931E-03	.3175	1.262E-02	.4033	1.289E-02	.4121	4.460E-03
56			3.95							
1	4004(275)	4.78	3.87	8.437E-03	.2697	1.072E-02	.3426	1.095E-02	.3501	3.789E-03
5	5645(275)	4.81	3.89	8.410E-03	.2688	1.068E-02	.3415	1.092E-02	.3489	3.777E-03
1	4005(275)	5.86	4.96	7.402E-03	.2385	9.481E-03	.3031	9.686E-03	.3096	3.351E-03
5	5646(275)	5.86	4.96	7.402E-03	.2385	9.481E-03	.3031	9.686E-03	.3096	3.351E-03
1	4006(275)	6.93	6.02	6.702E-03	.2162	8.542E-03	.2746	8.777E-03	.2806	3.037E-03
5	5647(275)	6.93	6.02	6.702E-03	.2162	8.542E-03	.2746	8.777E-03	.2806	3.037E-03
1	4007(275)	8.03	7.12	6.218E-03	.1987	7.899E-03	.2525	8.070E-03	.2580	2.792E-03
5	5648(275)	8.03	7.12	6.218E-03	.1987	7.899E-03	.2525	8.070E-03	.2580	2.792E-03
1	4008(275)	9.09	8.17	5.804E-03	.1855	7.374E-03	.2357	7.533E-03	.2408	2.607E-03
5	5649(275)	9.09	8.17	5.804E-03	.1855	7.374E-03	.2357	7.533E-03	.2408	2.607E-03
1	4009(275)	10.19	9.27	5.444E-03	.1742	6.922E-03	.2213	7.072E-03	.2261	2.447E-03
5	5650(275)	10.19	9.27	5.444E-03	.1742	6.922E-03	.2213	7.072E-03	.2261	2.447E-03
1	4010(275)	11.26	10.35	5.157E-03	.1649	6.552E-03	.2095	6.694E-03	.2140	2.316E-03
5	5651(275)	11.26	10.35	5.157E-03	.1649	6.552E-03	.2095	6.694E-03	.2140	2.316E-03
1	4011(275)	12.34	11.43	4.908E-03	.1569	6.236E-03	.1993	6.371E-03	.2037	2.204E-03
5	5652(275)	12.34	11.43	4.908E-03	.1569	6.236E-03	.1993	6.371E-03	.2037	2.204E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
109	11	TRIP					.110	0	1.679E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
8.00	802.0	1329	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (RE .040 FT)	STREF (RE .040 FT)
96.3	.082	3.6PC	3847	7.157E-05	7.754E-08	3.551E 06	3.128E-02	1.428E-02

LAMFRA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RMOACRR)	TRAN(TO)	HETA(TO)
10F(T)	437					
5ICE(S)	396	275	87	.0627	2.[illegible]4E-01	2.6462E-01
5B						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)
1	4012(275)	13.42	12.50	4.642E-03	.1500	5.962E-03	.1906	6.091E-03	.1947	2.107E-0[illegible]
5	5654(275)	13.42	12.50	4.642E-03	.1500	5.962E-03	.1906	6.091E-03	.1947	2.10[illegible]
1	4013(275)	14.49	13.58	4.503E-03	.1439	5.721E-03	.1829	5.844E-0[illegible]	.1868	2.022E-[illegible]
5	5655(275)	14.49	13.58	4.503E-03	.1439	5.721E-03	.1829	5.844E-03	.1868	2.022E-03
1	4014(275)	15.57	14.65	4.334E-03	.1385	5.507E-03	.1760	5.626E-03	.1798	1.9[illegible]
5	5655(275)	15.57	14.65	4.334E-03	.1385	5.507E-03	.1760	5.626E-03	.1798	1.9[illegible]
1	4015(275)	16.64	15.73	4.163E-03	.1337	5.315E-03	.1699	5.430E-03	.1736	1.8[illegible]-03
5	5656(275)	16.64	15.73	4.163E-03	.1337	5.315E-03	.1699	5.430E-03	.1736	1.8[illegible]-03
		17.19		MODEL HAS LEFT CENTERLINE						
1	4016(275)	17.72	16.81	4.047E-03	.1294	5.142E-03	.1644	5.253E-03	.1679	1.818E-03
5	5657(275)	17.72	16.81	4.047E-03	.1294	5.142E-03	.1644	5.253E-03	.1679	1.818E-03
1	4017(275)	18.80	17.88	3.923E-03	.1254	4.985E-03	.1593	5.092E-03	.1628	1.76[illegible]
5	5658(275)	18.80	17.88	3.923E-03	.1254	4.985E-03	.1593	5.092E-03	.1628	1.762[illegible]
1	4018(275)	19.90	18.98	3.808E-03	.1217	4.838E-03	.1546	4.943E-03	.1580	1.7[illegible]
5	5659(275)	19.90	18.98	3.808E-03	.1217	4.838E-03	.1546	4.943E-03	.1580	1.710E-03
1	4019(275)	20.95	20.04	3.707E-03	.1185	4.709E-03	.1505	4.811E-03	.1538	1.665E-03
5	5660(275)	20.95	20.04	3.707E-03	.1185	4.709E-03	.1505	4.811E-03	.1538	1.665E-03
1	4020(275)	22.05	21.14	3.609E-03	.1154	4.585E-03	.1466	4.684E-03	.1497	1.6[illegible]E-03
5	5661(275)	22.05	21.14	3.609E-03	.1154	4.585E-03	.1466	4.684E-03	.1497	1.6[illegible]E-03
1	4021(275)	23.13	22.21	3.520E-03	.1125	4.473E-03	.1430	4.569E-03	.1461	1.5[illegible]1E-03
5	5662(275)	23.13	22.21	3.520E-03	.1125	4.473E-03	.1430	4.569E-03	.1461	1.5[illegible]1E-03
1	4022(275)	24.20	23.29	3.438E-03	.1099	4.368E-03	.1396	4.462E-03	.1426	1.544E-03
5	5663(275)	24.20	23.29	3.438E-03	.1099	4.368E-03	.1396	4.462E-03	.1426	1.544E-03
1	4023(275)	25.28	24.37	3.361E-03	.1074	4.270E-03	.1365	4.361E-03	.1395	1.510E-03
5	5664(275)	25.28	24.37	3.361E-03	.1074	4.270E-03	.1365	4.361E-03	.1395	1.510E-03

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VON KARMAN GAS DYNAMICS FACILITY

V41H-824 50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	RER	RED
109	11	TRIP					.110	0	1.679E 06	0

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREHEND	ROLL-MODEL	TAU
8.00	802.0	1329	19.99	10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SREF (W= .040 FT)
96.3	.0[illegible]2	3.0[illegible]0	3847	7.157E-05	7.754E-08	3.551E 06	3.128E-02	1.624E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMACACK)	TRAR(TO)	BETA(TO)
10F(T)	437					
3IEE(S)	394	275	RT	.0027	2.404E-01	2.6462E-01
36						

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.892TO)	H(.892TO)/HREF	ST(TO)

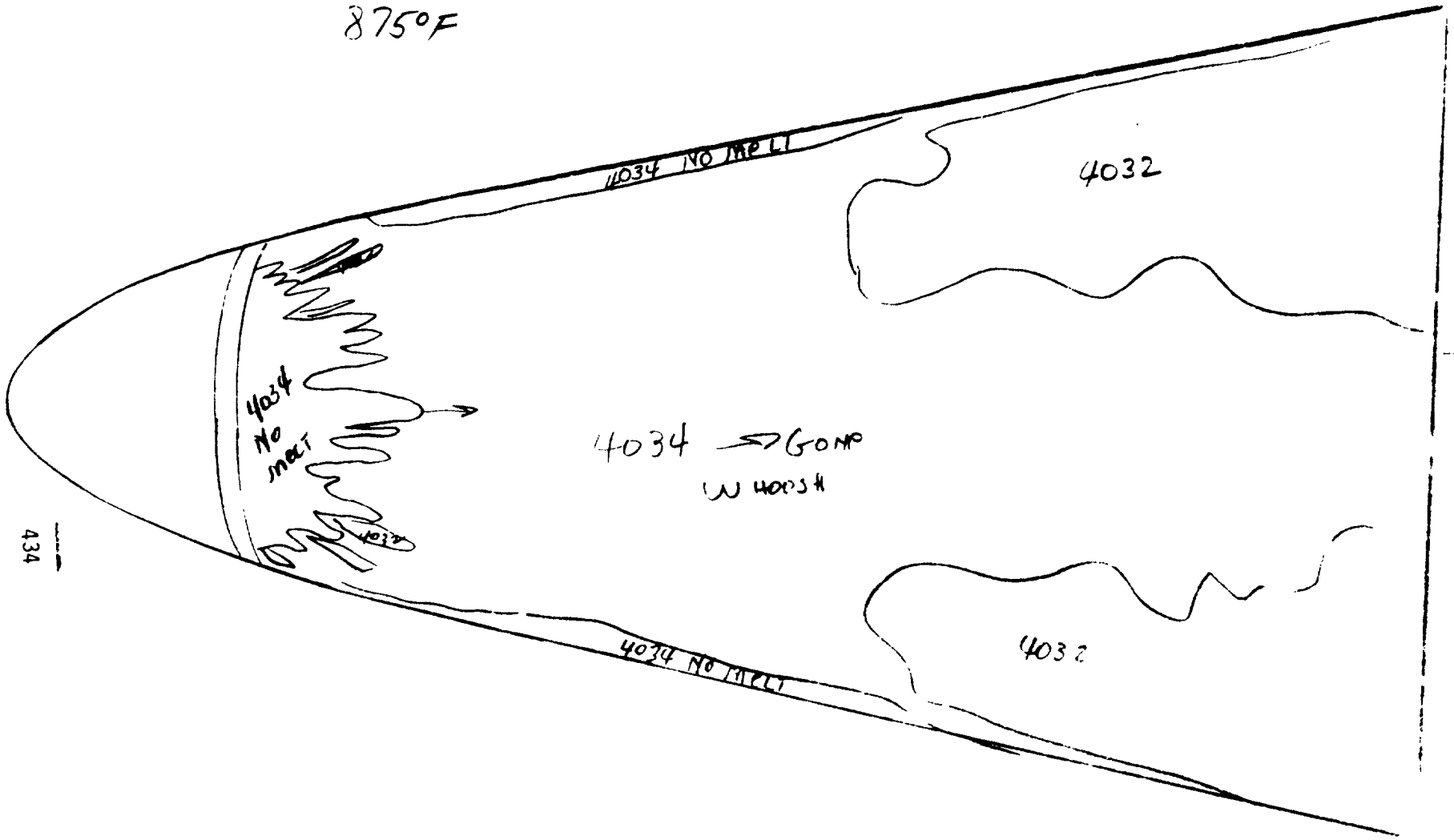
437

T_{PC} = 350°F α = 30° 4028 ℄

T_P 110

800 PSIA

875°F



V41H-R28

VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

RUN	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	REO
116	11	TRIP				5	.110	.015	1.677E 06	4.432E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	800.4	1329	30.04	-.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
96.3	.082	3.673	3846	7.145E-05	7.751E-08	3.546E 06	3.125E-02	1.438E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOXCAX)	TRAN(TO)	BETA(TO)
IOF(I)	497					
SICF(S)	394	359	84	.0652	3.398E-01	4.1682E-01
S6						

PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.913TO)	H(.913TO)/HREF	ST(TO)
I 4025(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
S 5666(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
I 4026(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S 5667(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63							
I 4027(350)	2.63	1.71	2.075E-02	.6641	2.729E-02	.8733	2.625E-02	.8401	9.301E-03
S 5668(350)	2.63	1.71	2.075E-02	.6641	2.729E-02	.8733	2.625E-02	.8401	9.301E-03
I 4028(350)	3.70	2.79	1.627E-02	.5206	2.139E-02	.6845	2.058E-02	.6585	7.290E-03
S 5669(350)	3.70	2.79	1.627E-02	.5206	2.139E-02	.6845	2.058E-02	.6585	7.290E-03
S6		3.95							
S 5670(350)	4.76	3.04	1.388E-02	.4437	1.826E-02	.5836	1.754E-02	.5612	6.213E-03
I 4029(350)	4.78	3.07	1.382E-02	.4422	1.817E-02	.5815	1.748E-02	.5594	6.193E-03
I 4030(350)	5.86	4.94	1.222E-02	.3911	1.607E-02	.5143	1.546E-02	.4948	5.478E-03
S 5671(350)	5.86	4.94	1.222E-02	.3911	1.607E-02	.5143	1.546E-02	.4948	5.478E-03
I 4031(350)	6.91	5.99	1.110E-02	.3552	1.460E-02	.4670	1.404E-02	.4493	4.974E-03
S 5672(350)	6.91	5.99	1.110E-02	.3552	1.460E-02	.4670	1.404E-02	.4493	4.974E-03
I 4032(350)	8.01	7.10	1.020E-02	.3265	1.342E-02	.4293	1.291E-02	.4130	4.572E-03
S 5673(350)	8.01	7.10	1.020E-02	.3265	1.342E-02	.4293	1.291E-02	.4130	4.572E-03
I 4033(350)	9.09	8.17	9.507E-03	.3042	1.250E-02	.4000	1.203E-02	.3848	4.260E-03
S 5674(350)	9.09	8.17	9.507E-03	.3042	1.250E-02	.4000	1.203E-02	.3848	4.260E-03
I 4034(350)	10.16	9.25	8.936E-03	.2860	1.175E-02	.3760	1.130E-02	.3617	4.005E-03
S 5675(350)	10.16	9.25	8.936E-03	.2860	1.175E-02	.3760	1.130E-02	.3617	4.005E-03
I 4035(350)	11.24	10.32	8.458E-03	.2706	1.112E-02	.3559	1.070E-02	.3424	3.790E-03
S 5676(350)	11.24	10.32	8.458E-03	.2706	1.112E-02	.3559	1.070E-02	.3424	3.790E-03
S 5677(350)	12.31	11.40	8.049E-03	.2576	1.058E-02	.3387	1.018E-02	.3258	3.607E-03
I 4036(350)	12.34	11.43	8.040E-03	.2573	1.057E-02	.3383	1.017E-02	.3254	3.603E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	RED
110	11	TRIP				S	.110	.015	1.677E 06	4.432E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	800.4	1329	30.04	-.04	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SREF (H= .040 FT)
[illegible]	.082	3.673	3846	7.145E-05	7.751E-08	3.546E 06	3.125E-02	1.430E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMGACAK)	TBAR(TO)	BETA(TO)
106(T)	437					
SIDE(S)	394	350	96	.0652	3.390E-01	4.1682E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.913TO)	H(.913TO)/HREF	ST(TO)
		12.41		MODEL HAS LEFT CENTERLINE						
1	6437(35A)	13.42	12.56	7.686E-03	.2460	1.011E-02	.3234	9.723E-03	.3111	3.444E-03
2	5678(35A)	13.42	12.56	7.686E-03	.2460	1.011E-02	.3234	9.723E-03	.3111	3.444E-03
1	6438(35A)	14.47	13.56	7.382E-03	.2362	9.707E-03	.3106	9.338E-03	.2988	3.308E-03
2	5679(35A)	14.47	13.56	7.382E-03	.2362	9.707E-03	.3106	9.338E-03	.2988	3.308E-03
1	6439(35A)	15.57	14.66	7.099E-03	.2272	9.335E-03	.2987	8.980E-03	.2874	3.181E-03
2	5680(35A)	15.57	14.66	7.099E-03	.2272	9.335E-03	.2987	8.980E-03	.2874	3.181E-03

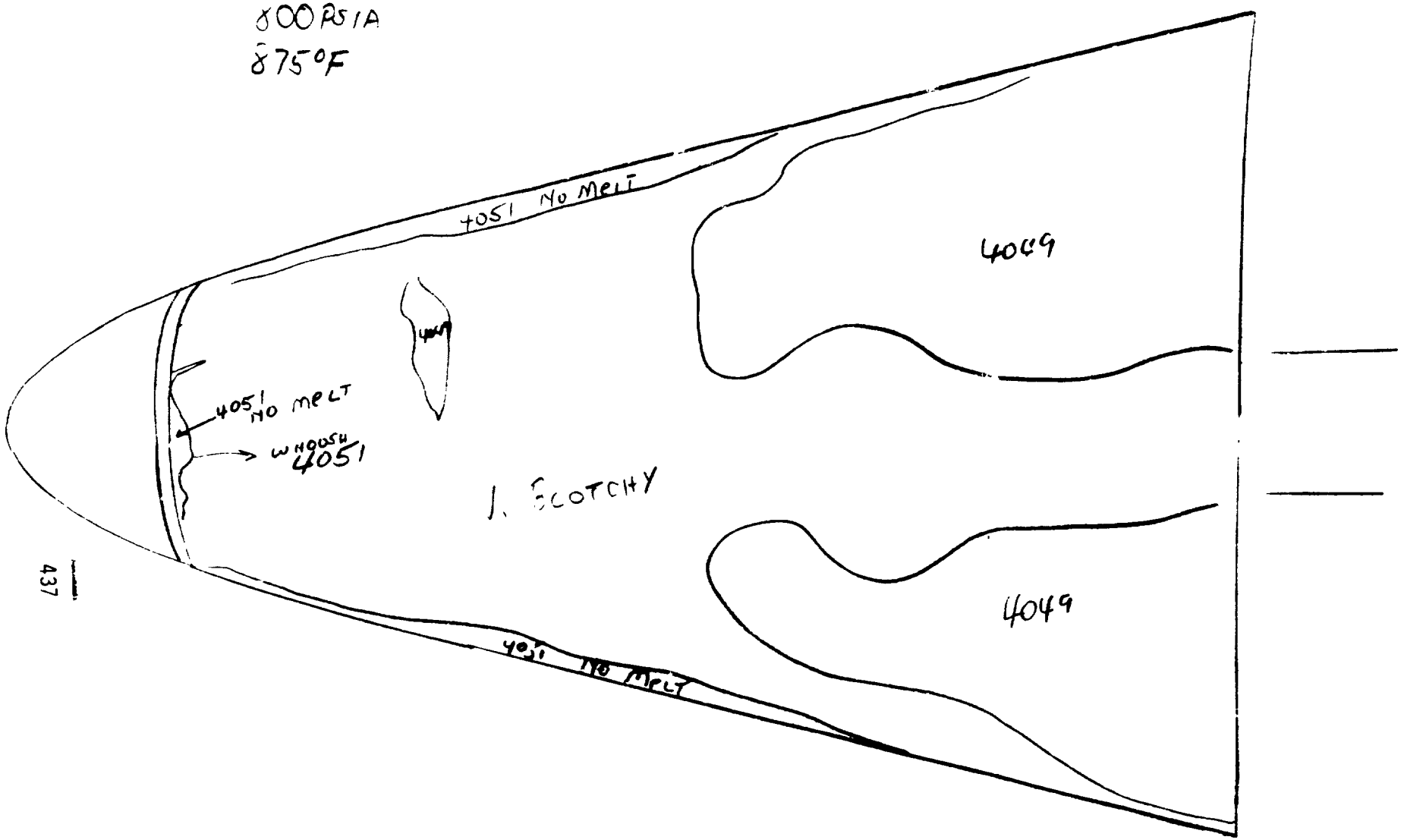
#37
GP 111

$T_{PC} = 400°F$

$\alpha = 40°$

4044 ℄

800 PSIA
875°F



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VON KARMAN GAS DYNAMICS FACILITY

V41H-H28 50 INCH HYPERSONIC TUNNEL A

WHCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	HED
111	11	TRIP				S	.110	.015	1.672E 06	4.418E 03

MACH NO	POI SIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	800.3	1331	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
96.5	.082	3.672	3850	7.130E-05	7.767E-08	3.534E 06	3.126E-02	1.431E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKM)	TRAR(TO)	BETA(TO)
10F(1)	437					
5ICE(5)	394	400	85	.0660	4.006E-01	5.3258E-01

>6

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	4041(400)	.48		MODEL HAS NOT REACHED CENTERLINE						
>	5682(400)	.48		MODEL HAS NOT REACHED CENTERLINE						
1	4042(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5683(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.60							
1	4043(400)	2.63	1.73	2.673E-02	.8552	3.620E-02	1.1582	3.224E-02	1.0329	1.196E-02
>	5684(400)	2.63	1.73	2.673E-02	.8552	3.620E-02	1.1582	3.224E-02	1.0329	1.196E-02
1	4044(400)	3.68	2.78	2.108E-02	.6744	2.855E-02	.9133	2.546E-02	.8146	9.432E-03
>	5685(400)	3.68	2.78	2.108E-02	.6744	2.855E-02	.9133	2.546E-02	.8146	9.432E-03
>6			3.93							
>	5686(400)	4.73	3.83	1.746E-02	.5745	2.432E-02	.7780	2.169E-02	.6939	8.034E-03
1	4045(400)	4.76	3.86	1.740E-02	.5726	2.424E-02	.7755	2.162E-02	.6916	8.025E-03
1	4046(400)	5.83	4.93	1.583E-02	.5063	2.143E-02	.6857	1.912E-02	.6115	7.081E-03
>	5687(400)	5.83	4.93	1.583E-02	.5063	2.143E-02	.6857	1.912E-02	.6115	7.081E-03
1	4047(400)	6.91	6.01	1.434E-02	.4587	1.942E-02	.6212	1.732E-02	.5540	6.415E-03
>	5688(400)	6.91	6.01	1.434E-02	.4587	1.942E-02	.6212	1.732E-02	.5540	6.415E-03
>	5689(400)	7.96	7.06	1.323E-02	.4232	1.792E-02	.5731	1.598E-02	.5111	5.918E-03
1	4048(400)	7.98	7.08	1.321E-02	.4225	1.789E-02	.5721	1.595E-02	.5102	5.902E-03
1	4049(400)	9.04	8.14	1.232E-02	.3942	1.669E-02	.5339	1.488E-02	.4761	5.513E-03
>	5690(400)	9.04	8.14	1.232E-02	.3942	1.669E-02	.5339	1.488E-02	.4761	5.513E-03
1	4050(400)	10.11	9.21	1.158E-02	.3705	1.568E-02	.5017	1.399E-02	.4475	5.18[illegible]E-03
>	5691(400)	10.11	9.21	1.158E-02	.3705	1.568E-02	.5017	1.399E-02	.4475	5.181E-03
1	4051(400)	11.19	10.29	1.096E-02	.3506	1.484E-02	.4747	1.324E-02	.4234	4.903E-03
>	5692(400)	11.19	10.29	1.096E-02	.3506	1.484E-02	.4747	1.324E-02	.4234	4.903E-03
1	4052(400)	12.26	11.36	1.043E-02	.3336	1.412E-02	.4517	1.259E-02	.4029	4.665E-03
>	5693(400)	12.26	11.36	1.043E-02	.3336	1.412E-02	.4517	1.259E-02	.4029	4.665E-03

NASA-HI OM 5a

VA1H-924

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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WRCUF CONFIG

111 11

*** MODEL DESCRIPTION ***

TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	REO
			S	.118	.015	1.672E 06	4.418E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
8.00	800.3	1331	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (HW .060 FT)	SIREF (HW .060 FT)
98.5	.042	3.673	3650	7.130E-05	7.767E-08	3.534E 06	3.126E-02	1.431E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACAK)	TBAR(TO)	BETA(TO)
10F(T)	438					
3ICE(S)	394	400	85	.0660	4.006E-01	5.3258E-01
36						

	MIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	4055(400)	13.24	12.44	9.966E-03	.3188	1.350E-02	.4317	1.204E-02	.3850	4.458E-03
5	5495(400)	13.24	12.44	9.966E-03	.3188	1.350E-02	.4317	1.204E-02	.3850	4.458E-03
		13.44		MODEL HAS LEFT CENTERLINE						
1	4055(400)	14.42	13.59	9.561E-03	.3058	1.295E-02	.4142	1.155E-02	.3694	4.277E-03
5	5495(400)	14.42	13.59	9.561E-03	.3058	1.295E-02	.4142	1.155E-02	.3694	4.277E-03
1	4055(400)	15.49	14.59	9.201E-03	.2944	1.246E-02	.3986	1.111E-02	.3555	4.116E-03
5	5495(400)	15.49	14.59	9.201E-03	.2944	1.246E-02	.3986	1.111E-02	.3555	4.116E-03

437

OD 112

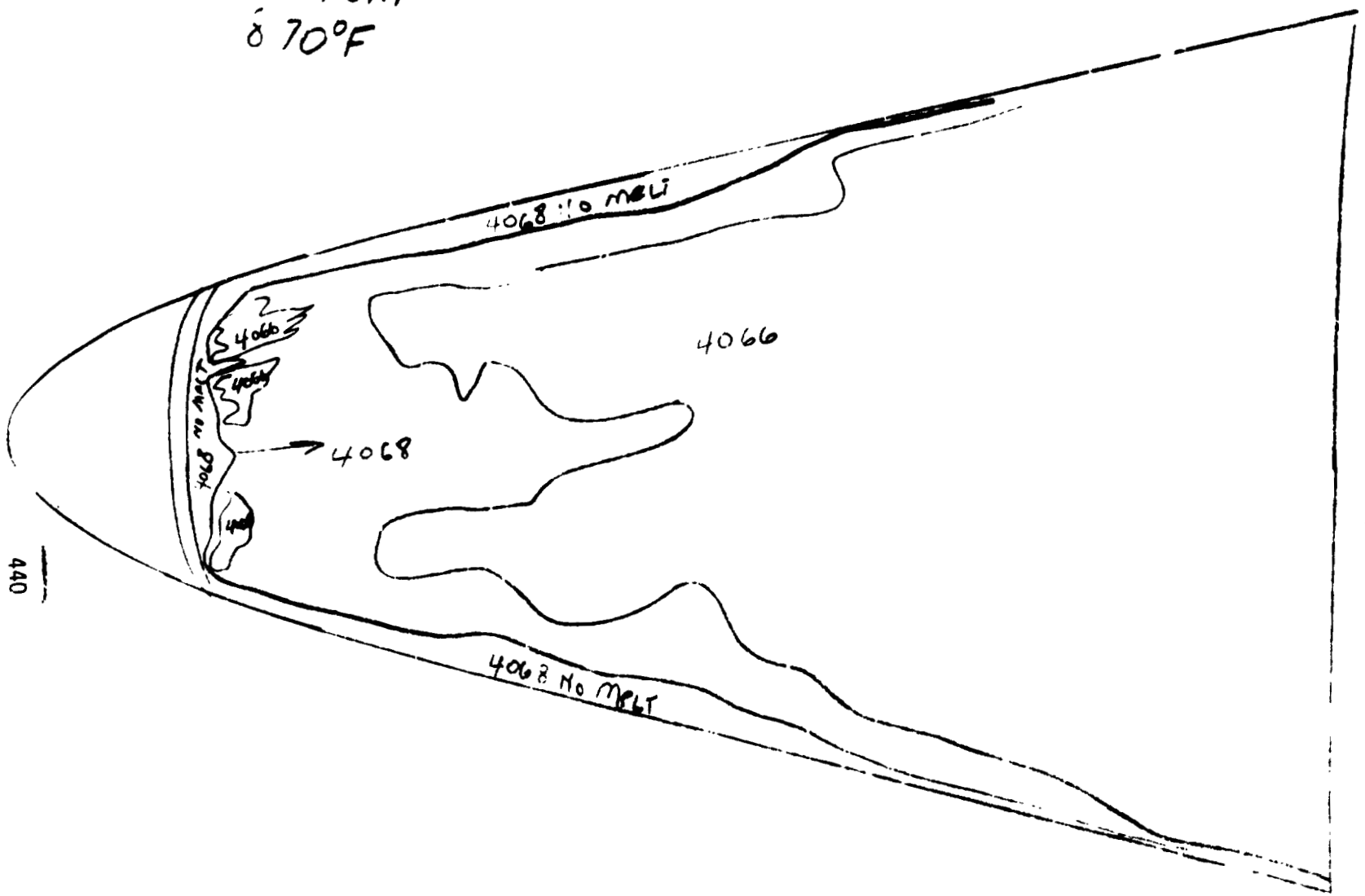
135 PSIA

& 70°F

$T_{PC} = 400°F$

$\alpha = 40°$

4060 ℄



NASA-RI OH 54 AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE 10- 8-74 PAGE 1

V41R-R/A VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GRCUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
112	11	TRIP				S	.110	.015	1.554E 06	4.108E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
8.00	736.0	1322	40.02	-10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	SIREF (W= .040 FT)
95.0	.075	1.377	3836	6.605E-05	7.710E-08	3.286E 06	2.996E-02	1.086E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKR)	TBAR(TO)	BETA(TO)
10R(T)	437					
5IDE(S)	394	400	98	.0660	4.018E-01	5.3493E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	4057(400)	.45		MODEL HAS NOT REACHED CENTERLINE						
5	5698(400)	.45		MODEL HAS NOT REACHED CENTERLINE						
1	4058(400)	1.53		MODEL HAS NOT REACHED CENTERLINE						
5	5699(400)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INFECT TIME =			1.69							
1	4059(400)	2.60	1.76	2.705E-02	.9035	3.681E-02	1.2295	3.276E-02	1.0942	1.312E-02
5	5700(400)	2.60	1.76	2.705E-02	.9035	3.681E-02	1.2295	3.276E-02	1.0942	1.312E-02
1	4060(400)	3.68	2.78	2.117E-02	.7073	2.882E-02	.9625	2.565E-02	.8566	1.027E-02
5	5701(400)	3.68	2.78	2.117E-02	.7073	2.882E-02	.9625	2.565E-02	.8566	1.027E-02
>6			3.90							
1	4061(400)	4.73	3.83	1.804E-02	.6025	2.455E-02	.8199	2.185E-02	.7297	8.748E-03
5	5702(400)	4.73	3.83	1.804E-02	.6025	2.455E-02	.8199	2.185E-02	.7297	8.748E-03
1	4062(400)	5.81	4.91	1.594E-02	.5323	2.169E-02	.7245	1.930E-02	.6447	7.729E-03
5	5703(400)	5.81	4.91	1.594E-02	.5310	2.163E-02	.7226	1.925E-02	.6431	7.709E-03
1	4063(400)	6.91	6.01	1.440E-02	.4811	1.960E-02	.6547	1.744E-02	.5827	6.985E-03
5	5704(400)	6.91	6.01	1.440E-02	.4811	1.960E-02	.6547	1.744E-02	.5827	6.985E-03
1	4064(400)	7.96	7.06	1.329E-02	.4438	1.808E-02	.6040	1.609E-02	.5375	6.444E-03
5	5705(400)	7.96	7.06	1.329E-02	.4438	1.808E-02	.6040	1.609E-02	.5375	6.444E-03
1	4065(400)	9.04	8.14	1.238E-02	.4134	1.684E-02	.5626	1.499E-02	.5007	6.003E-03
5	5706(400)	9.04	8.14	1.238E-02	.4134	1.684E-02	.5626	1.499E-02	.5007	6.003E-03
1	4066(400)	10.14	9.24	1.162E-02	.3880	1.581E-02	.5280	1.407E-02	.4699	5.634E-03
5	5707(400)	10.14	9.24	1.162E-02	.3880	1.581E-02	.5280	1.407E-02	.4699	5.634E-03
1	4067(400)	11.21	10.31	1.099E-02	.3672	1.496E-02	.4997	1.331E-02	.4447	5.331E-03
5	5708(400)	11.21	10.31	1.099E-02	.3672	1.496E-02	.4997	1.331E-02	.4447	5.331E-03
1	4068(400)	12.29	11.39	1.046E-02	.3494	1.424E-02	.4755	1.267E-02	.4232	5.073E-03
5	5709(400)	12.29	11.39	1.046E-02	.3494	1.424E-02	.4755	1.267E-02	.4232	5.073E-03

WHCUB	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	REO
112	11	TRIM				5	.110	.015	1.554E 06	4.100E 03

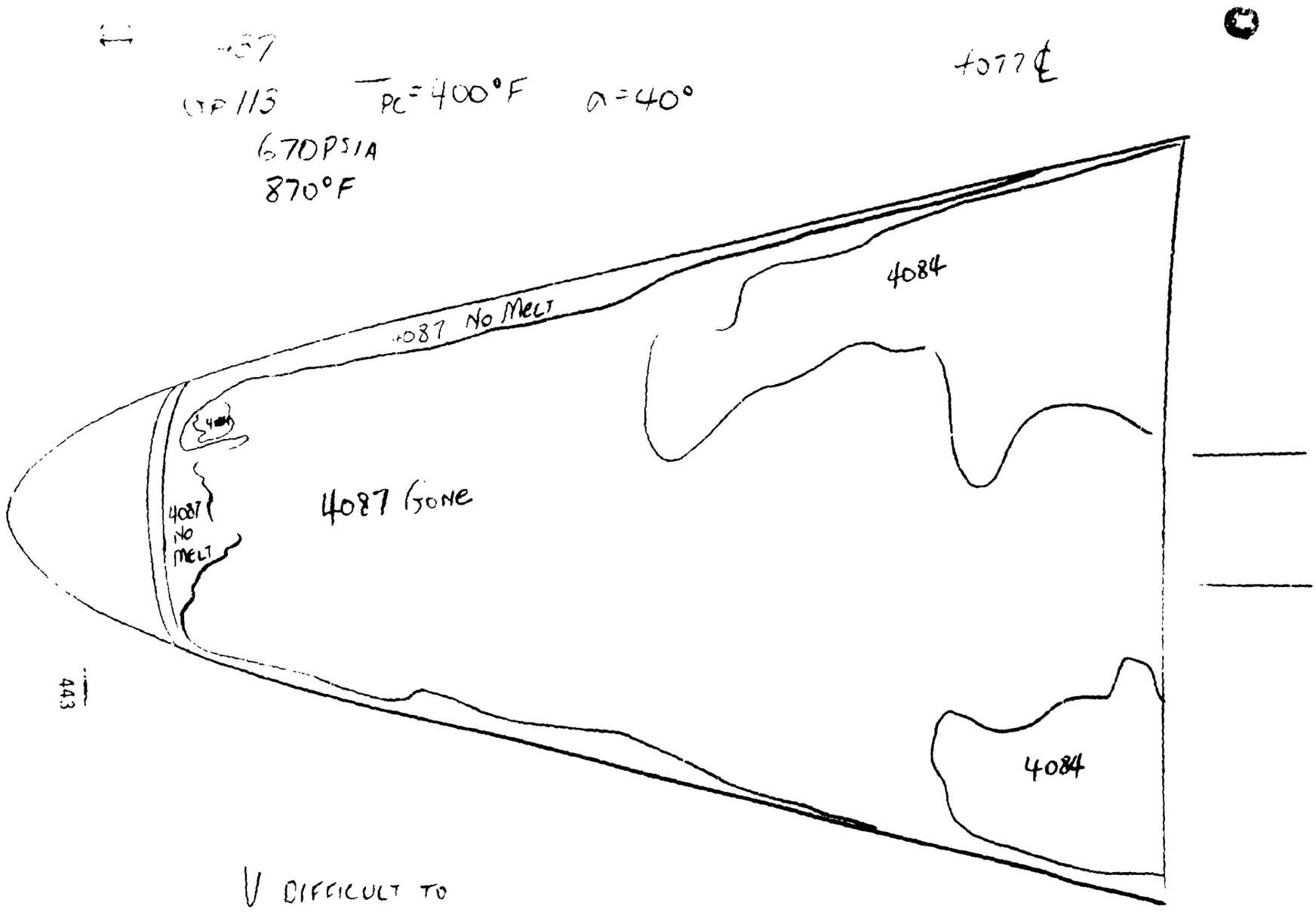
MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREMEND	ROLL-MODEL	YAW
4.00	736.0	1322	40.02	-10.02	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .060 FT)	STREF (R= .060 FT)
95.0	.075	3.377	3030	6.405E-05	7.710E-08	3.786E 04	2.994E-02	1.486E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAR)	TRAN(TO)	BETA(TO)
IOFIT)	437					
SICE(S)	394	400	98	.0668	4.019E-01	5.3493E-01

>6

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	4069(400)	13.37	12.47	9.999E-03	.3340	1.301E-02	.4545	1.211E-02	.4045	4.849E-03
>	5712(400)	13.37	12.47	9.999E-03	.3340	1.301E-02	.4545	1.211E-02	.4045	4.849E-03
		14.12		MODEL HAS LEFT CENTERLINE						
I	4070(400)	14.44	13.54	9.594E-03	.3205	1.306E-02	.4361	1.162E-02	.3881	4.653E-03
>	5711(400)	14.44	13.54	9.594E-03	.3205	1.306E-02	.4361	1.162E-02	.3881	4.653E-03
I	4071(400)	15.52	14.62	9.234E-03	.3084	1.257E-02	.4197	1.118E-02	.3736	4.478E-03
>	5712(400)	15.52	14.62	9.234E-03	.3084	1.257E-02	.4197	1.118E-02	.3736	4.478E-03
I	4072(400)	16.59	15.69	8.912E-03	.2977	1.213E-02	.4051	1.076E-02	.3605	4.322E-03
>	5713(400)	16.59	15.69	8.912E-03	.2977	1.213E-02	.4051	1.076E-02	.3605	4.322E-03



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URCUP CONFIG *** MODEL DESCRIPTION ***

			GAP LOCATION/SIZE			TRIP LOCATION/SIZE			REB	RED
113	11	THIN	X/L	WIDTH	DEPTH	TYPE	X/L	DIA.		
							.110	.015	1.418E 06	3.747E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	470.7	1324	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SINEF (R= .040 FT)
96.1	.049	3.095	3839	4.044E-05	7.741E-08	2.598E 06	2.867E-02	1.594E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCAR)	TRAN(TO)	BETA(TO)
>OP(T)	437					
>ICE(S)	394	400	84	.0400	4.053E-01	5.420E-01
>G						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
				MODEL HAS NOT REACHED CENTERLINE						
I	4076(400)	.50								
>	5715(400)	.50		MODEL HAS NOT REACHED CENTERLINE						
I	4075(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
>	5716(400)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.65								
I	4076(400)	2.63	1.71	2.732E-02	.9530	3.713E-02	1.2953	3.307E-02	1.1534	1.447E- [illegible]
>	5717(400)	2.63	1.71	2.732E-02	.9530	3.713E-02	1.2953	3.307E-0[illegible]	1.1534	1.447E [illegible]
I	4077(400)	3.70	2.76	2.142E-02	.7470	2.911E-02	1.0152	2.592E-02	.9041	1.134E-[illegible]2
>	5718(400)	3.70	2.76	2.142E-02	.7470	2.911E-02	1.0152	2.592E-02	.9041	1.134E-02
>G		3.93								
I	4078(400)	4.76	3.84	1.825E-02	.6367	2.481E-02	.8653	2.204E-02	.7705	9.665E-03
>	5719(400)	4.76	3.84	1.825E-02	.6367	2.481E-02	.8653	2.204E-02	.7705	9.665E-03
I	4079(400)	5.83	4.92	1.613E-02	.5627	2.193E-02	.7648	1.952E-02	.6810	8.542E-03
>	5720(400)	5.83	4.92	1.613E-02	.5627	2.193E-02	.7648	1.952E-02	.6810	8.542E-03
I	4080(400)	6.91	5.99	1.461E-02	.5097	1.986E-02	.6927	1.769E-02	.6169	7.737E-03
>	5721(400)	6.91	5.99	1.461E-02	.5097	1.986E-02	.6927	1.769E-02	.6169	7.737E-03
>	5722(400)	7.98	7.07	1.345E-02	.4693	1.829E-02	.6378	1.628E-02	.5680	7.124E-03
I	4081(400)	8.01	7.1[illegible]	1.343E-02	.4685	1.825E-02	.6367	1.625E-02	.5670	7.112E-03
I	4082(400)	9.06	8.1[illegible]	1.253E-02	.4372	1.704E-02	.5942	1.517E-02	.5291	6.637E-03
>	5723(400)	9.06	8.1[illegible]	1.253E-02	.4372	1.704E-02	.5942	1.517E-02	.5291	6.637E-03
I	4083(400)	10.14	9.22	1.178E-02	.4109	1.601E-02	.5585	1.426E-02	.4973	6.238E-03
>	5724(400)	10.14	9.22	1.178E-02	.4109	1.601E-02	.5585	1.426E-02	.4973	6.238E-03
I	4084(400)	11.21	10.30	1.115E-02	.3889	1.515E-02	.5285	1.349E-02	.4706	5.903E-03
>	5725(400)	11.21	10.30	1.115E-02	.3889	1.515E-02	.5285	1.349E-02	.4706	5.903E-03
I	4085(400)	12.29	11.38	1.061E-02	.3700	1.442E-02	.5029	1.284E-02	.4478	5.617E-03
>	5726(400)	12.29	11.38	1.061E-02	.3700	1.442E-02	.5029	1.284E-02	.4478	5.617E-03

V41H-828

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
113	11	TRIP				S	.110	.015	1.418E 06	3.747E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTION	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	670.7	1324	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	RHEF (R= .040 FT)	STHEF (R= .040 FT)
96.1	.089	3.095	3839	6.064E-05	7.741E-08	2.59RE 06	2.467E-02	1.554E-02

CAMERA (OF(T) SIDE(S) SG	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRAN(TO)	BETA(TO)
	437					
	396	400	84	.0660	4.053E-01	5.420RE-01

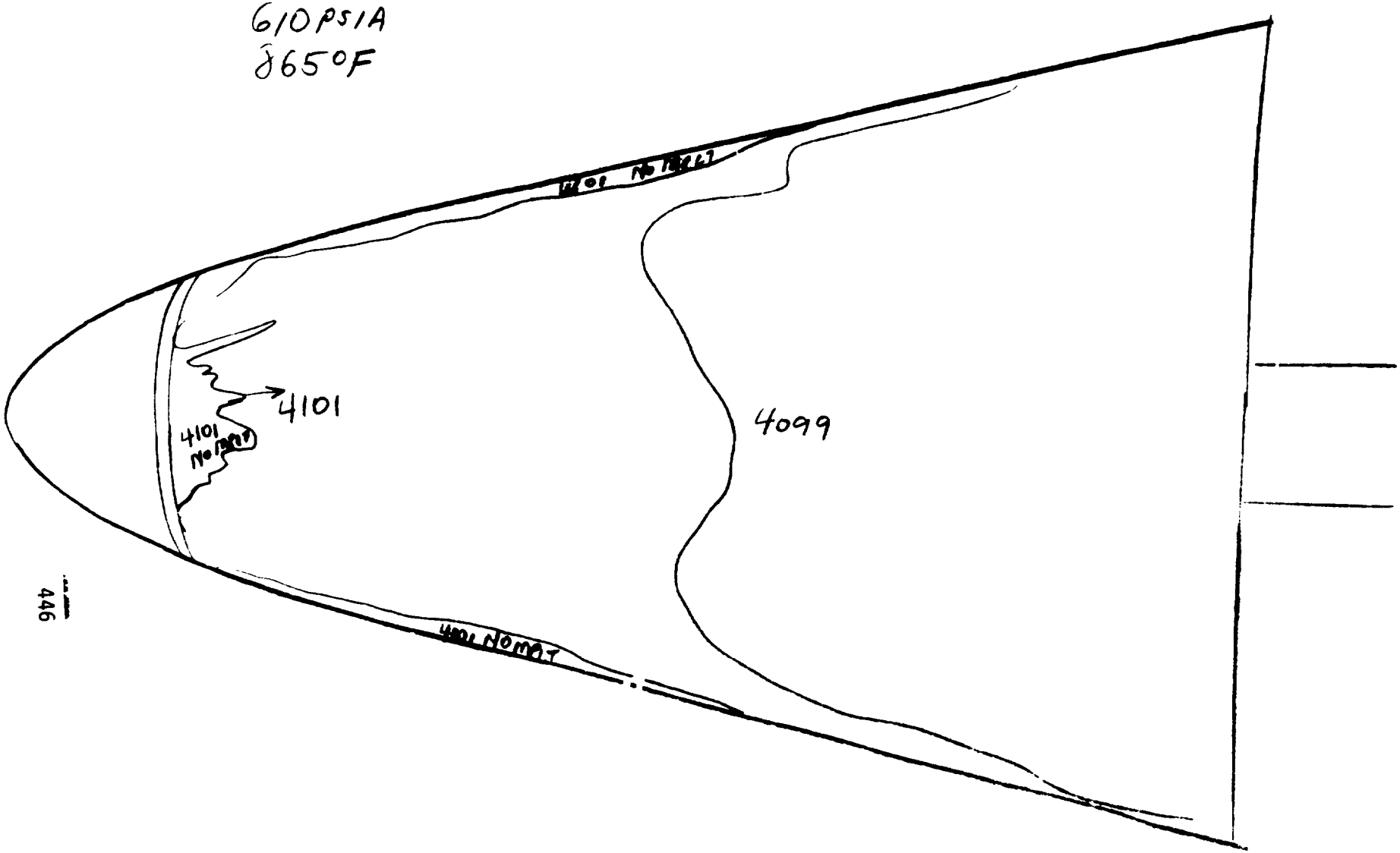
	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
L	4086(400)	13.37	12.46	1.014E-02	.3536	1.37RE-02	.4866	1.227E-02	.4280	5.368E-03
R	5727(400)	13.37	12.45	1.014E-02	.3534	1.37RE-02	.4866	1.227E-02	.4280	5.368E-03
L	4087(400)	14.44	13.53	9.727E-03	.3393	1.322E-02	.4611	1.177E-02	.4106	5.151E-03
R	5728(400)	14.44	13.53	9.727E-03	.3393	1.322E-02	.4611	1.177E-02	.4106	5.151E-03
		15.17		MODEL HAS LEFT CENTERLINE						
L	4088(400)	15.52	14.61	9.362E-03	.3266	1.272E-02	.4438	1.133E-02	.3952	4.957E-03
R	5729(400)	15.52	14.61	9.362E-03	.3266	1.272E-02	.4438	1.133E-02	.3952	4.957E-03
L	4089(400)	16.59	15.68	9.035E-03	.3151	1.228E-02	.4283	1.093E-02	.3814	4.784E-03
R	5730(400)	16.59	15.68	9.035E-03	.3151	1.228E-02	.4283	1.093E-02	.3814	4.784E-03
L	4090(400)	17.67	16.76	8.740E-03	.3049	1.188E-02	.4143	1.058E-02	.3690	4.628E-03
R	5731(400)	17.67	16.76	8.740E-03	.3049	1.188E-02	.4143	1.058E-02	.3690	4.628E-03

437
Gp 114

610 PSIA
865°F

$T_R = 350°F$
$\alpha = 40°$

4095 ℄



GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	RED
114	11	TRIP				5	.110	.015	1.303E 06	3.443E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	611.8	1317	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
95.7	.063	2.823	3829	5.540E-05	7.703E-08	2.754E 06	2.736E-02	1.622E-02

LAPERA	ROLL NO	WALL TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKK)	TRAR(TO)	HETA(TO)
(DEG)	437					
SIDE(S)	394	350	82	.0652	3.457E-01	4.2844E-01
S6						

PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1 4092(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
5 5733(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
1 4093(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
5 5734(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.60							
1 4094(350)	2.60	1.70	2.140E-02	.7823	2.826E-02	1.0328	2.547E-02	.9310	1.243E-02
5 5735(350)	2.60	1.70	2.140E-02	.7823	2.826E-02	1.0328	2.547E-02	.9310	1.243E-02
1 4095(350)	3.70	2.80	1.668E-02	.6097	2.202E-02	.8049	1.985E-02	.7256	9.688E-03
5 5736(350)	3.70	2.80	1.668E-02	.6097	2.202E-02	.8049	1.985E-02	.7256	9.688E-03
S6		3.93							
1 4096(350)	4.78	3.88	1.418E-02	.5183	1.872E-02	.6843	1.687E-02	.6168	8.236E-03
5 5737(350)	4.78	3.88	1.418E-02	.5183	1.872E-02	.6843	1.687E-02	.6168	8.236E-03
1 4097(350)	5.86	4.96	1.255E-02	.4584	1.656E-02	.6055	1.493E-02	.5458	7.287E-03
5 5738(350)	5.86	4.96	1.255E-02	.4584	1.656E-02	.6055	1.493E-02	.5458	7.287E-03
1 4098(350)	6.93	6.03	1.137E-02	.4157	1.501E-02	.5488	1.353E-02	.4947	6.605E-03
5 5739(350)	6.93	6.03	1.137E-02	.4157	1.501E-02	.5488	1.353E-02	.4947	6.605E-03
1 4099(350)	8.01	7.11	1.048E-02	.3829	1.383E-02	.5056	1.247E-02	.4557	6.085E-03
5 5740(350)	8.01	7.11	1.048E-02	.3829	1.383E-02	.5056	1.247E-02	.4557	6.085E-03
1 4100(350)	9.09	8.19	9.763E-03	.3569	1.289E-02	.4712	1.162E-02	.4247	5.671E-03
5 5741(350)	9.09	8.19	9.763E-03	.3569	1.289E-02	.4712	1.162E-02	.4247	5.671E-03
1 4101(350)	10.16	9.24	9.179E-03	.3355	1.212E-02	.4430	1.092E-02	.3993	5.331E-03
5 5742(350)	10.16	9.24	9.179E-03	.3355	1.212E-02	.4430	1.092E-02	.3993	5.331E-03
	10.89		MODEL HAS LEFT CENTERLINE						
1 4102(350)	11.24	10.34	8.688E-03	.3176	1.147E-02	.4193	1.034E-02	.3779	5.046E-03
5 5743(350)	11.24	10.34	8.688E-03	.3176	1.147E-02	.4193	1.034E-02	.3779	5.046E-03
1 4103(350)	12.31	11.41	8.208E-03	.3022	1.092E-02	.3990	9.839E-03	.3597	4.802E-03
5 5744(350)	12.31	11.41	8.208E-03	.3022	1.092E-02	.3990	9.839E-03	.3597	4.802E-03

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
114	11	TRIP				5	.110	.015	1.303E 06	3.443E 03

MACH NO	P0(PSIA)	T0(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	111.8	1317	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (W= .040 FT)	STREF (W= .040 FT)
95.7	.051	2.823	3825	5.540E-05	7.703E-08	2.754E 06	2.736E-02	1.622E-02

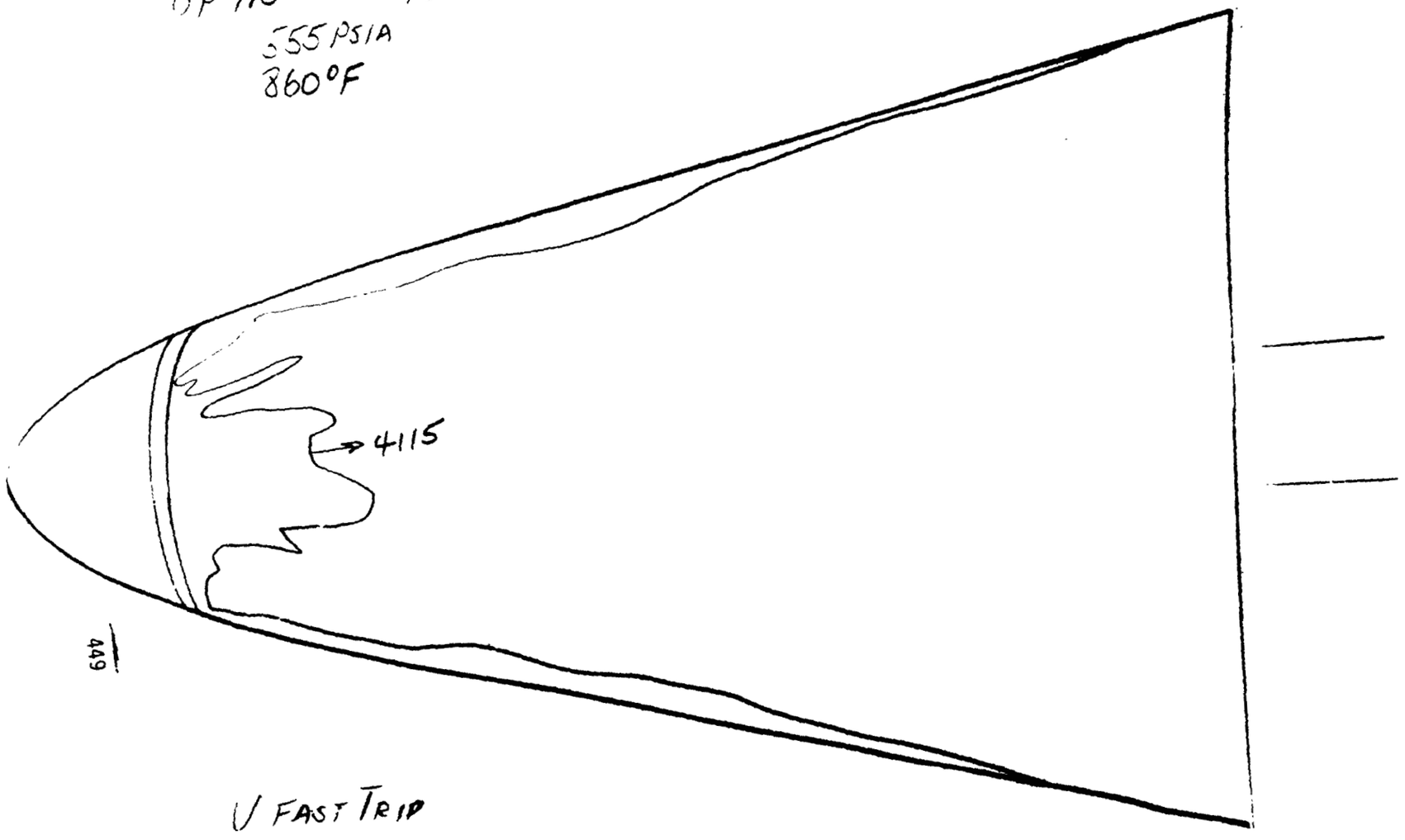
LAMBDA (DEG)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKA)	TBAR(TO)	HETA(TO)
	437					
SICE(S)	394	350	82	.0652	3.457E-01	4.2844E-01
SG						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	4104(350)	13.39	12.49	7.904E-03	.2889	1.044E-02	.3814	9.406E-03	.3438	4.591E-03
5	5765(350)	13.39	12.49	7.904E-03	.2889	1.044E-02	.3814	9.406E-03	.3438	4.591E-03
1	4105(350)	22.43	21.53	6.021E-03	.2201	7.9[illegible]E-03	.2906	7.165E-03	.2619	3.497E-0[illegible]

437

GP 115 $T_{PC} = 350°F$ $\alpha = 40°$ 4109℄

555 PSIA
860°F



V FAST TRIP

NASA-HI OH 54

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL B

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*41A-824

GRCUP CONFIG *** MODEL DESCRIPTION ***

115 11 TRIP

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	HED
			S	.110	.015	1.177E 06	3.110E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.99	556.2	1323	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SINEF (R= .040 FT)
96.1	.057	2.547	3838	5.015E-05	7.737E-08	2.088E 06	2.611E-02	1.706E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCACK)	TRAN(TO)	BETA(TO)
10F(T)	437					
5IDE(S)	394	350	82	.0659	3.431E-01	4.2392E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	4106(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
S	5747(350)	.45		MODEL HAS NOT REACHED CENTERLINE						
I	4107(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
S	5748(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.60							
I	4108(350)	2.60	1.74	2.118E-02	.8111	2.790E-02	1.0686	2.517E-02	.9640	1.355E-02
S	5749(350)	2.60	1.74	2.118E-02	.8111	2.790E-02	1.0686	2.517E-02	.9640	1.355E-02
I	4109(350)	3.68	2.78	1.658E-02	.6350	2.146E-02	.8365	1.970E-02	.7547	1.061E-02
S	5750(350)	3.68	2.78	1.658E-02	.6350	2.146E-02	.8365	1.970E-02	.7547	1.061E-02
5G			3.93							
I	4110(350)	4.76	3.86	1.408E-02	.5392	1.854E-02	.7103	1.673E-02	.6408	9.009E-03
S	5751(350)	4.76	3.86	1.408E-02	.5392	1.854E-02	.7103	1.673E-02	.6408	9.009E-03
I	4111(350)	5.86	4.96	1.241E-02	.4755	1.635E-02	.6264	1.475E-02	.5651	7.94[illegible]
S	5752(350)	5.86	4.96	1.241E-02	.4755	1.635E-02	.6264	1.475E-02	.5651	7.94[illegible]
I	4112(350)	6.91	6.01	1.128E-02	.4319	1.485E-02	.5690	1.340E-02	.5133	7.217E-03
S	5753(350)	6.91	6.01	1.128E-02	.4319	1.485E-02	.5690	1.340E-02	.5133	7.217E-03
I	4113(350)	7.98	7.08	1.038E-02	.3978	1.368E-02	.5240	1.234E-02	.4727	6.646E-03
S	5754(350)	8.01	7.11	1.037E-02	.3971	1.366E-02	.5231	1.232E-02	.4719	6.635E-03
I	4114(350)	9.09	8.19	9.660E-03	.3700	1.273E-02	.4875	1.148E-02	.4398	6.183E-03
S	5755(350)	9.09	8.19	9.660E-03	.3700	1.273E-02	.4875	1.148E-02	.4398	6.183E-03
I	4115(350)	10.14	9.24	9.094E-03	.3484	1.198E-02	.4589	1.081E-02	.4140	5.821E-03
S	5756(350)	10.14	9.24	9.094E-03	.3484	1.198E-02	.4589	1.081E-02	.4140	5.821E-03
I	4116(350)	11.21	10.31	8.606E-03	.3297	1.134E-02	.4343	1.023E-02	.3918	5.509E-03
S	5757(350)	11.21	10.31	8.606E-03	.3297	1.134E-02	.4343	1.023E-02	.3918	5.509E-03
I	4117(350)	12.29	11.39	8.190E-03	.3137	1.079E-02	.4133	9.733E-03	.3728	5.242E-03
S	5758(350)	12.31	11.41	8.181E-03	.3134	1.078E-02	.4128	9.722E-03	.3724	5.236E-03

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V61H-H26

AEDC(ARO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL R

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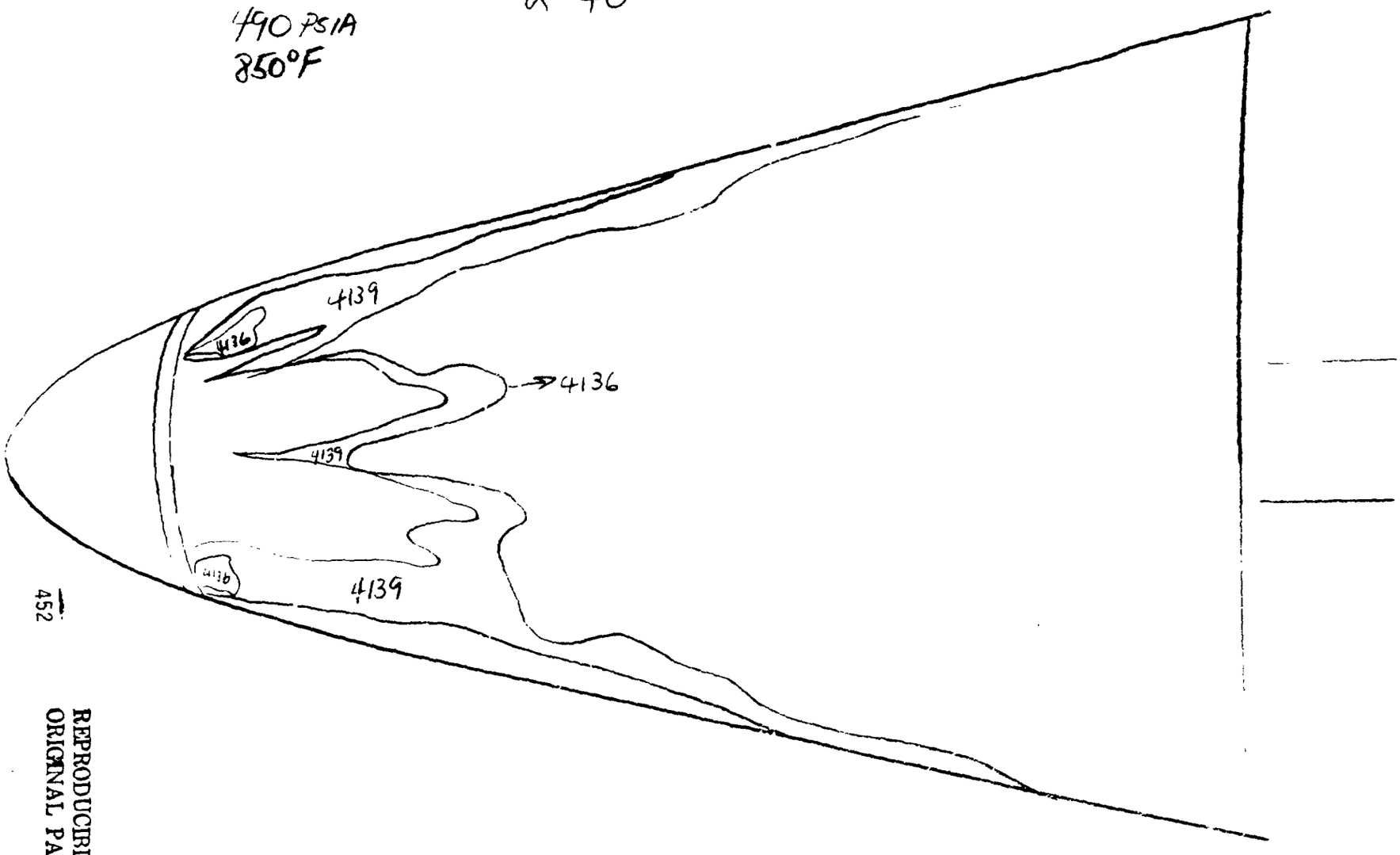
WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
115	11	TRIP				S	.110	.015	1.177E 06	3.110E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.49	554.2	1323	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	XREF (RE .040 FT)	SIREF (RE .040 FT)
96.1	.057	2.567	3838	5.015E-05	7.737E-08	2.488E 06	2.611E-02	1.704E-02

CAPERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RMCACKR)	TRAR(TO)	BETA(TO)
(OF(T)	437					
SIDE(S)	396	350	82	.0652	3.431E-01	4.2392E-01
>6						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	4118(350)	13.37	12.67	7.828E-03	.2999	1.031E-02	.3950	9.303E-03	.3564	5.011E-03
>	5759(350)	13.37	12.67	7.828E-03	.2999	1.031E-02	.3950	9.303E-03	.3564	5.011E-03
I	4119(350)	14.44	13.54	7.511E-03	.2877	9.896E-03	.3790	8.926E-03	.3419	4.807E-03
>	5760(350)	14.44	13.54	7.511E-03	.2877	9.896E-03	.3790	8.926E-03	.3419	4.807E-03
I	4120(350)	15.52	14.62	7.224E-03	.2769	9.523E-03	.3648	8.591E-03	.3291	4.627E-03
>	5761(350)	15.52	14.62	7.224E-03	.2769	9.523E-03	.3648	8.591E-03	.3291	4.627E-03
		16.12		MODEL HAS LEFT CENTERLINE						
I	4121(350)	16.59	15.69	6.977E-03	.2673	9.191E-03	.3521	8.291E-03	.3176	4.465E-03
>	5762(350)	16.59	15.69	6.977E-03	.2673	9.191E-03	.3521	8.291E-03	.3176	4.465E-03
I	4122(350)	17.67	16.77	6.749E-03	.2585	8.891E-03	.3406	8.021E-03	.3073	4.320E-03
>	5763(350)	17.67	16.77	6.749E-03	.2585	8.891E-03	.3406	8.021E-03	.3073	4.320E-03
I	4123(350)	18.75	17.85	6.542E-03	.2506	8.619E-03	.3301	7.775E-03	.2978	4.188E-03
>	5764(350)	18.75	17.85	6.542E-03	.2506	8.619E-03	.3301	7.775E-03	.2978	4.188E-03



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V419-828

AEDC(APO,INC.) ARNOLD AFS,TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL H

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GRCUP CONFIG *** MODEL DESCRIPTION *** GAP LOCATION/SIZE X/L WIDTH DEPTH TRIP LOCATION/SIZE TYPE X/L DIA. REB RED

114 31 TRIP S .110 .015 1.061E 06 2.004E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTCH	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	450.6	1307	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	SIREF (R= .040 FT)
95.1	.051	2.277	3816	4.505E-05	7.659E-08	2.243E 06	2.453E-02	1.797E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HHOACAK)	TRAN(TO)	RETA(TO)
10F(1)	437					
5ICF(5)	396	350	88	.0652	3.454E-01	4.2781E-01
5G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	4125(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
5	5766(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
1	4126(350)	1.53		MODEL HAS NOT REACHED CENTERLINE						
5	5767(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =		1.63								
1	4127(350)	2.60	1.69	2.1061E-02	.8747	2.845E-02	1.1597	2.560E-02	1.0435	1.540E-02
5	5768(350)	2.68	1.65	2.1066E-02	.8747	2.845E-02	1.1597	2.562E-02	1.0435	1.540E-02
5	5769(350)	3.68	2.77	1.677E-02	.6837	2.224E-02	.9064	2.001E-02	.8156	1.204E-02
1	4128(350)	3.70	2.79	1.670E-02	.6806	2.214E-02	.9023	1.992E-02	.8119	1.198E-02
5G		3.95								
1	4129(350)	4.78	3.87	1.418E-02	.5782	1.881E-02	.7666	1.692E-02	.6898	1.018E-02
5	5770(350)	4.78	3.87	1.418E-02	.5782	1.881E-02	.7666	1.692E-02	.6898	1.018E-02
1	4130(350)	5.83	4.92	1.256E-02	.5127	1.668E-02	.6797	1.500E-02	.6116	9.027E-03
5	5771(350)	5.83	4.92	1.256E-02	.5127	1.668E-02	.6797	1.500E-02	.6116	9.027E-03
1	4131(350)	6.93	6.02	1.137E-02	.4636	1.507E-02	.6144	1.356E-02	.5529	8.159E-03
5	5772(350)	6.93	6.02	1.137E-02	.4636	1.507E-02	.6144	1.356E-02	.5529	8.159E-03
1	4132(350)	8.01	7.10	1.047E-02	.4268	1.388E-02	.5659	1.248E-02	.5092	7.515E-03
5	5773(350)	8.01	7.10	1.047E-02	.4268	1.388E-02	.5659	1.248E-02	.5092	7.515E-03
1	4133(350)	9.09	8.17	9.757E-03	.3977	1.294E-02	.5273	1.164E-02	.4745	7.003E-03
5	5774(350)	9.09	8.17	9.757E-03	.3977	1.294E-02	.5273	1.164E-02	.4745	7.003E-03
1	4134(350)	10.16	9.24	9.172E-03	.3739	1.216E-02	.4957	1.094E-02	.4460	6.583E-03
	5775(350)	10.16	9.24	9.172E-03	.3739	1.216E-02	.4957	1.094E-02	.4460	6.583E-03
1	4135(350)	11.24	10.32	8.681E-03	.3539	1.151E-02	.4691	1.036E-02	.4222	6.230E-03
5	5776(350)	11.24	10.32	8.681E-03	.3539	1.151E-02	.4691	1.036E-02	.4222	6.230E-03
1	4136(350)	12.31	11.40	8.201E-03	.3367	1.095E-02	.4465	9.855E-03	.4017	5.929E-03
5	5777(350)	12.31	11.40	8.201E-03	.3367	1.095E-02	.4465	9.855E-03	.4017	5.929E-03

WRCUF	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REA	REW
116	11	TRIP				5	.110	.015	1.061E 06	2.804E 03

MACH N	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-FREEWND	ROLL-MODEL	YAW
7.98	490.6	1307	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (IN .040 FT)	SREF (IN .040 FT)
95.1	.051	2.277	3814	4.505E-05	7.654E-08	2.243E 06	2.453E-02	1.797E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAKR)	THAW(TO)	BETA(TO)
10F(T)	437					
51CE(S)	396	350	88	.0692	3.454E-01	4.278E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	413F(35A)	13.29	12.48	7.847E-03	.3219	1.047E-02	.4268	9.421E-03	.3840	5.667E-03
S	577H(35A)	13.29	12.48	7.847E-03	.3219	1.047E-02	.4268	9.421E-03	.3840	5.667E-03
I	413H(35A)	14.47	13.58	7.577E-03	.3088	1.005E-02	.4095	9.034E-03	.3685	5.438E-03
S	577I(35A)	14.47	13.58	7.577E-03	.3088	1.005E-02	.4095	9.034E-03	.3685	5.438E-03
I	413I(35A)	15.54	14.63	7.243E-03	.2973	9.669E-03	.3941	8.700E-03	.3546	5.234E-03
S	578O(35A)	15.54	14.63	7.243E-03	.2973	9.669E-03	.3941	8.700E-03	.3546	5.234E-03
I	414O(35A)	[illegible].62	15.71	7.038E-03	.2889	9.332E-03	.3804	8.397E-03	.3423	5.051E-03
S	578I(35A)	.62	15.71	7.038E-03	.2889	9.332E-03	.3804	8.397E-03	.3423	5.051E-03
I	414I(35A)	17.70	16.78	6.809E-03	.2775	9.027E-03	.3680	8.123E-03	.3311	4.887E-03
S	578J(35A)	17.70	16.78	6.809E-03	.2775	9.027E-03	.3680	8.123E-03	.3311	4.887E-03
I	414J(35A)	18.77	17.84	6.601E-03	.2691	8.751E-03	.3567	7.874E-03	.3210	4.737E-03
S	578K(35A)	18.77	17.84	6.601E-03	.2691	8.751E-03	.3567	7.874E-03	.3210	4.737E-03
I	414K(35A)	19.85	18.93	6.410E-03	.2613	8.499E-03	.3464	7.647E-03	.3117	4.601E-03
S	578L(35A)	19.87	18.94	6.406E-03	.2611	8.493E-03	.3462	7.642E-03	.3115	4.598E-03
I	414L(35A)	20.92	20.01	6.235E-03	.2542	8.267E-03	.3370	7.439E-03	.3032	4.475E-03
S	578M(35A)	20.92	20.01	6.235E-03	.2542	8.267E-03	.3370	7.439E-03	.3032	4.475E-03
I	414M(35A)	22.00	21.09	6.074E-03	.2476	8.053E-03	.3283	7.247E-03	.2954	4.360E-03
S	578N(35A)	22.00	21.09	6.074E-03	.2476	8.053E-03	.3283	7.247E-03	.2954	4.360E-03
I	414N(35A)	23.08	22.14	5.925E-03	.2415	7.855E-03	.3202	7.068E-03	.2881	4.252E-03
S	578O(35A)	23.08	22.14	5.925E-03	.2415	7.855E-03	.3202	7.068E-03	.2881	4.252E-03
		23.20		MODEL WAS LEFT CENTERLINE						
I	414O(35A)	24.[illegible]	23.24	5.766E-03	.2350	7.671E-03	.3127	6.903E-03	.2814	4.154E-03
S	578P(35A)	24.[illegible]5	23.24	5.766E-03	.2350	7.671E-03	.3127	6.903E-03	.2814	4.154E-03
I	414P(35A)	25.63	24.32	5.657E-03	.2306	7.500E-03	.3057	6.748E-03	.2751	4.060E-03
S	578Q(35A)	25.63	24.32	5.657E-03	.2306	7.500E-03	.3057	6.748E-03	.2751	4.060E-03

NASA-HI OM 54

AEDC(AND.INC.) ARNOLD AFS.TENNESSEE
VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

V41H-A24

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REX	RED
116	11					5	.110	.015	1.041E 06	2.804E 03

TRIP	MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWIND	ROLL-MODEL	YAW
	7.98	450.6	1307	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	U-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	SIREF (H= .040 FT)
95.1	.051	2.277	3814	4.505E-05	7.654E-08	2.243E 06	2.453E-02	1.797E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (HMCACRA)	TRAN(TO)	BETA(TO)
10F(1)	.37					
SICE(S)	394	350	88	.0052	1.454E-01	4.2781E-01
56						

PIC NO	TIME DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)

437

GP117

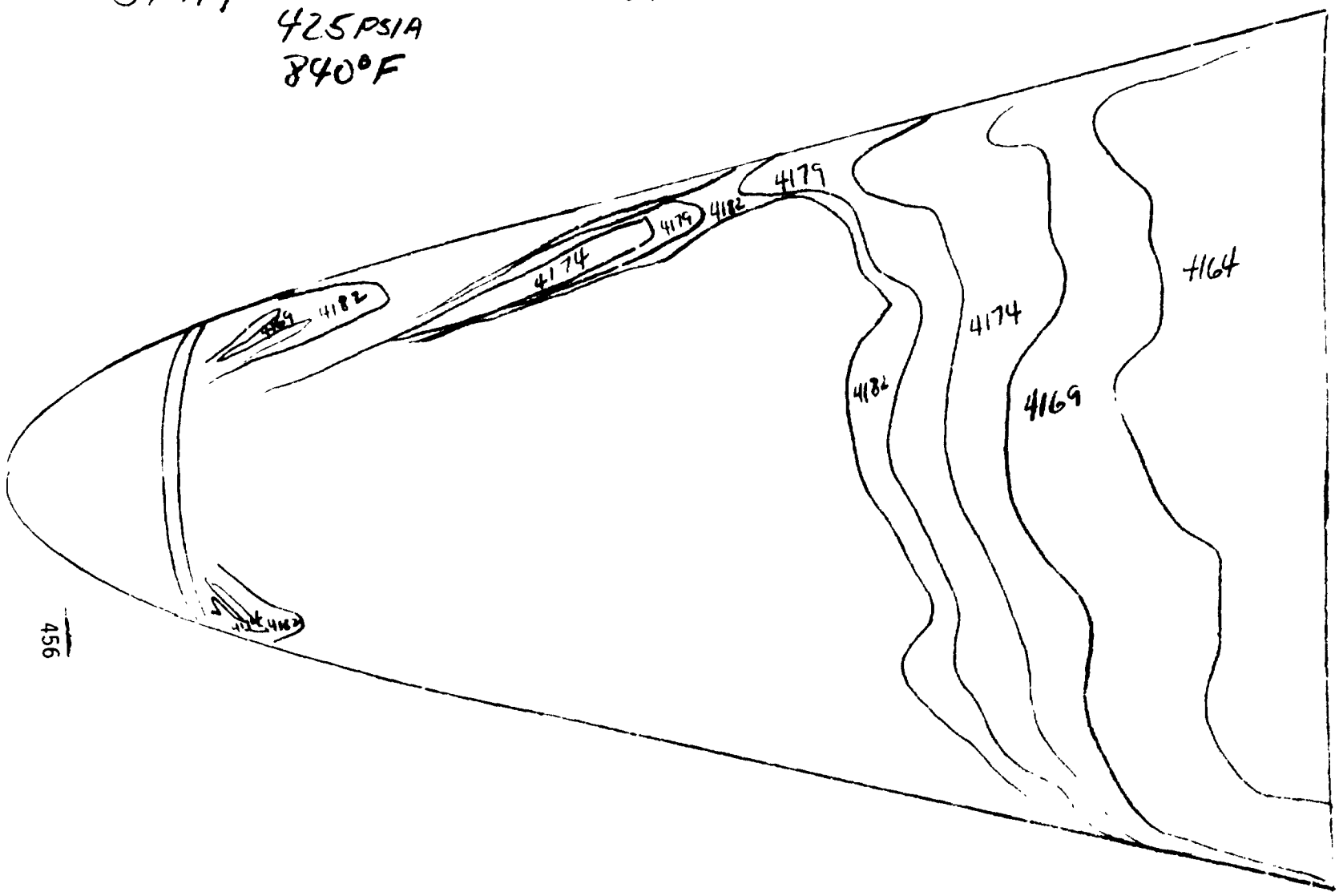
T_{PC} = 350°F

α' = 40°

425 PSIA

840°F

4153 ℄



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V41R-A24 VON KARMAN GAS DYNAMICS FACILITY
50 INCH HYPERSONIC TUNNEL A

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RED
117	11	TRIP				S	.110	.015	9.379E 05	2.479E 03

MACH NO	P0(PSIA)	T0(DEG F)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREHEND	ROLL-MODEL	YAW
7.98	425.3	1290	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (H= .040 FT)	STREF (H= .040 FT)
93.5	.044	1.974	3789	3.956E-05	7.560E-08	1.583E 06	2.279E-02	1.915E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOUCMK)	TRAP(TO)	BETA(TO)
(OF(T)	437					
SICE(S)	396	350	80	.0652	3.523E-01	4.4017E-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	4150(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
S	5791(350)	.48		MODEL HAS NOT REACHED CENTERLINE						
I	4151(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
S	5792(350)	1.55		MODEL HAS NOT REACHED CENTERLINE						
INJECT TIME =			1.63							
I	4152(350)	2.68	1.69	2.208E-02	.9487	2.947E-02	1.2929	2.644E-02	1.1601	1.818E-02
S	5793(350)	2.68	1.69	2.208E-02	.9487	2.947E-02	1.2929	2.644E-02	1.1601	1.818E-02
I	4153(350)	3.68	2.77	1.726E-02	.7571	2.303E-02	1.0105	2.067E-02	.9068	1.421E-02
S	5794(350)	3.68	2.77	1.726E-02	.7571	2.303E-02	1.0105	2.067E-02	.9068	1.421E-02
56			3.93							
S	5795(350)	4.36	3.84	1.496E-02	.6426	1.954E-02	.8574	1.753E-02	.7693	1.205E-02
I	154(350)	4.78	3.87	1.459E-02	.6403	1.948E-02	.8544	1.748E-02	.7668	1.201E-02
I	4155(350)	5.86	4.94	1.291E-02	.5663	1.723E-02	.7559	1.546E-02	.6783	1.063E-02
S	5796(350)	5.86	4.94	1.291E-02	.5663	1.723E-02	.7559	1.546E-02	.6783	1.063E-02
I	4156(350)	6.53	5.02	1.170E-02	.5132	1.561E-02	.6850	1.401E-02	.6146	9.629E-03
S	5797(350)	6.53	5.02	1.170E-02	.5132	1.561E-02	.6850	1.401E-02	.6146	9.629E-03
I	4157(350)	8.01	7.10	1.077E-02	.4727	1.438E-02	.6309	1.290E-02	.5661	8.869E-03
S	5798(350)	8.01	7.10	1.077E-02	.4727	1.438E-02	.6309	1.290E-02	.5661	8.869E-03
I	4158(350)	9.09	8.17	1.004E-02	.4405	1.340E-02	.5879	1.202E-02	.5275	8.265E-03
S	5799(350)	9.09	8.17	1.004E-02	.4405	1.340E-02	.5879	1.202E-02	.5275	8.265E-03
I	4159(350)	10.16	9.25	9.437E-	.4141	1.259E-02	.5526	1.130E-02	.4959	7.769E-03
S	5800(350)	10.19	9.27	9.426E-	.4135	1.258E-02	.5519	1.129E-02	.4952	7.758E-03
I	4160(350)	11.24	10.32	8.93[illegible]	.3919	1.192E-02	.5230	1.070E-02	.4693	7.353E-03
S	5801(350)	11.24	10.32	8.932E-03	.3919	1.192E-02	.5230	1.070E-02	.4693	7.353E-03
I	4161(350)	12.31	11.40	8.500E-03	.3729	1.134E-02	.4977	1.018E-02	.4466	6.997E-03
S	5802(350)	12.31	11.40	8.500E-03	.3729	1.134E-02	.4977	1.018E-02	.4466	6.997E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REB	RED
117	11	TRIP				6	.110	.015	9.379E 05	2.479E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREBEND	ROLL-MODEL	YAW
7.98	425.3	1250	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.9	.044	1.974	1789	3.956E-05	7.560E-08	1.583E 06	2.279E-02	1.915E-02

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOCAC(K)	TRAR(TO)	RETA(TO)
IOF(T)	437					
SIDE(S)	294	350	89	.0652	3.523E-01	4.4017E-01
>G						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
I	4162(350)	13.42	12.56	8.117E-03	.3561	1.083E-02	.4753	9.720E-03	.4265	6.682E-03
S	SP03(350)	13.42	12.56	8.117E-03	.3561	1.083E-02	.4753	9.720E-03	.4265	6.682E-03
I	4163(350)	14.49	13.58	7.788E-03	.3417	1.039E-02	.4561	9.327E-03	.4092	6.412E-03
S	SP04(350)	14.49	13.58	7.788E-03	.3417	1.039E-02	.4561	9.327E-03	.4092	6.412E-03
I	4164(350)	15.57	14.65	7.497E-03	.3289	1.001E-02	.4390	8.978E-03	.3939	6.172E-03
S	SP05(350)	15.57	14.65	7.497E-03	.3289	1.001E-02	.4390	8.978E-03	.3939	6.172E-03
I	4165(350)	16.64	15.73	7.236E-03	.3175	9.657E-03	.4237	8.666E-03	.3802	5.957E-03
S	SP06(350)	16.64	15.73	7.236E-03	.3175	9.657E-03	.4237	8.666E-03	.3802	5.957E-03
S	SP07(350)	17.72	16.81	7.000E-03	.3072	9.343E-03	.4099	8.386E-03	.3678	5.763E-03
I	4166(350)	17.75	16.83	6.995E-03	.3069	9.336E-03	.4096	8.377E-03	.3676	5.759E-03
I	4167(350)	18.80	17.88	6.786E-03	.2978	9.057E-03	.3974	8.127E-03	.3566	5.587E-03
S	SP08(350)	18.80	17.88	6.786E-03	.2978	9.057E-03	.3974	8.127E-03	.3566	5.587E-03
I	4168(350)	19.90	18.98	6.587E-03	.2890	8.791E-03	.3857	7.888E-03	.3461	5.422E-03
S	SP09(350)	19.90	18.98	6.587E-03	.2890	8.791E-03	.3857	7.888E-03	.3461	5.422E-03
I	4169(350)	20.97	20.06	6.408E-03	.2811	8.552E-03	.3752	7.674E-03	.3367	5.275E-03
S	SP10(350)	20.97	20.06	6.408E-03	.2811	8.552E-03	.3752	7.674E-03	.3367	5.275E-03
I	4170(350)	22.05	21.14	6.242E-03	.2739	8.331E-03	.3655	7.476E-03	.3280	5.139E-03
S	SP11(350)	22.05	21.14	6.242E-03	.2739	8.331E-03	.3655	7.476E-03	.3280	5.139E-03
I	4171(350)	23.10	22.19	6.093E-03	.2673	8.131E-03	.3568	7.297E-03	.3201	5.016E-03
S	SP12(350)	23.10	22.19	6.093E-03	.2673	8.131E-03	.3568	7.297E-03	.3201	5.016E-03
I	4172(350)	24.20	23.29	5.947E-03	.2609	7.937E-03	.3483	7.122E-03	.3125	4.896E-03
S	SP13(350)	24.20	23.29	5.947E-03	.2609	7.937E-03	.3483	7.122E-03	.3125	4.896E-03
I	4173(350)	25.28	24.37	5.814E-03	.2551	7.759E-03	.3405	6.962E-03	.3055	4.786E-03
S	SP14(350)	25.28	24.37	5.814E-03	.2551	7.759E-03	.3405	6.962E-03	.3055	4.786E-03
I	4174(350)	26.33	25.42	5.693E-03	.2498	7.597E-03	.3333	6.817E-03	.2991	4.686E-03
S	SP15(350)	26.33	25.42	5.693E-03	.2498	7.597E-03	.3333	6.817E-03	.2991	4.686E-03

GRCUP CONFIG *** MODEL DESCRIPTION ***

GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP TYPE	TRIP LOCATION/SIZE X/L	DIA.	REB	HEB
117 11			6	.110	.015	9.379E 05	2.479E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREMEND	ROLL-MODEL	YAW
7.98	425.3	1250	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF	STREF
93.5	.064	1.97	3784	3.956E-05	7.560E-08	1.583E 06	2.279E-02 (W= .040 FT)	1.915E-02 (W= .040 FT)

CAMERA	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACAK)	TBAR(TO)	BETA(TO)
10F(T)	437					
5ICE(S)	394	350	89	.0652	3.523E-01	4.4617E-01
56						

	PTC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	S(TO)
1	4175(350)	27.43	26.52	5.573E-03	.2445	7.438E-03	.3263	6.676E-03	.2928	4.508E-03
5	5P16(350)	27.43	26.52	5.573E-03	.2445	7.438E-03	.3263	6.676E-03	.2928	4.508E-03
1	4176(350)	28.51	27.59	5.463E-03	.2397	7.291E-03	.3199	6.543E-03	.2871	4.498E-03
5	5P17(350)	28.51	27.59	5.463E-03	.2397	7.291E-03	.3199	6.543E-03	.2871	4.498E-03
1	4177(350)	29.58	28.67	5.360E-03	.2352	7.153E-03	.3139	6.419E-03	.2816	4.412E-03
5	5P18(350)	29.58	28.67	5.360E-03	.2352	7.153E-03	.3139	6.419E-03	.2816	4.412E-03
1	4178(350)	30.66	29.74	5.262E-03	.2309	7.023E-03	.3081	6.302E-03	.2765	4.332E-03
5	5P19(350)	30.66	29.74	5.262E-03	.2309	7.023E-03	.3081	6.302E-03	.2765	4.332E-03
1	4179(350)	31.71	30.80	5.171E-03	.2269	6.902E-03	.3028	6.193E-03	.2717	4.257E-03
5	5P20(350)	31.71	30.80	5.171E-03	.2269	6.902E-03	.3028	6.193E-03	.2717	4.257E-03
1	4180(350)	32.81	31.90	5.081E-03	.2229	6.782E-03	.2976	6.085E-03	.2670	4.183E-03
5	5P21(350)	32.81	31.90	5.081E-03	.2229	6.782E-03	.2976	6.085E-03	.2670	4.183E-03
1	4181(350)	33.86	32.95	5.000E-03	.2194	6.673E-03	.2928	5.987E-03	.2627	4.116E-03
5	5P22(350)	33.86	32.95	5.000E-03	.2194	6.673E-03	.2928	5.987E-03	.2627	4.116E-03
		34.09		MODEL HAS LEFT CENTERLINE						
1	4182(350)	34.57	34.05	4.918E-03	.2158	6.564E-03	.2880	5.890E-03	.2584	4.049E-03
5	5P23(350)	34.57	34.05	4.918E-03	.2158	6.564E-03	.2880	5.890E-03	.2584	4.049E-03
1	4183(350)	36.04	35.13	.842E-03	.2125	6.462E-03	.2835	5.799E-03	.2544	3.986E-03
5	5P24(350)	36.04	35.13	.842E-03	.2125	6.462E-03	.2835	5.799E-03	.2544	3.986E-03
1	4184(350)	37.09	36.18	4.771E-03	.2093	6.368E-03	.2794	5.716E-03	.2507	3.928E-03
5	5P25(350)	37.12	36.24	4.770E-03	.2093	6.366E-03	.2793	5.712E-03	.2506	3.926E-03
1	4185(350)	38.17	37.24	4.702E-03	.2063	6.275E-03	.2753	5.631E-03	.2471	3.871E-03
5	5P26(350)	38.17	37.24	4.702E-03	.2063	6.275E-03	.2753	5.631E-03	.2471	3.871E-03
1	4186(350)	39.25	38.33	4.635E-03	.2034	6.186E-03	.2714	5.551E-03	.2436	3.816E-03
5	5P27(350)	39.25	38.33	4.635E-03	.2034	6.186E-03	.2714	5.551E-03	.2436	3.816E-03

GROUP	CONFIG	*** MODEL DESCRIPTION ***	GAP LOCATION/SIZE X/L	WIDTH	DEPTH	TRIP LOCATION/SIZE TYPE	X/L	DIA.	REB	RFD
117	11	TRIP				S	.110	.015	9.379E 05	2.479E 03

MACH NO	PO(PSIA)	TO(DEG R)	ALPHA-MODEL	ALPHA-SECTOR	ALPHA-PREWEND	ROLL-MODEL	YAW
7.98	425.3	1290	40.01	-10.01	30.00	0	0

T-INF (DEG R)	P-INF (PSIA)	Q-INF (PSIA)	V-INF (FT/SEC)	RHO-INF (SLUGS/FT3)	MU-INF (LB-SEC/FT2)	RE/FT (FT-1)	HREF (R= .040 FT)	STREF (R= .040 FT)
93.5	.044	1.974	3 89	3.95EE-05	7.560E-08	1.583E 06	2.279E-02	1.915E-02

CAPFFA (OF(T)	ROLL NO	PAINT TEMP (DEG F)	INITIAL TEMP (DEG F)	SQUARE ROOT (RHOACRK)	TRAP(TO)	BETA(TO)
	437					
SICE(S)	394	350	89	.0652	3.523E-01	4.401TE-01
56						

	PIC NO	TIME	DELTIME	H(TO)	H(TO)/HREF	H(.9TO)	H(.9TO)/HREF	H(.934TO)	H(.934TO)/HREF	ST(TO)
1	418T(350)	40.35	39.43	4.570E-03	.2005	4.099E-03	.2676	5.473E-03	.2401	3.76E-03
5	5P2P(350)	40.35	39.43	4.570E-03	.2005	4.099E-03	.2676	5.473E-03	.2401	3.762E-03
1	418H(350)	41.40	40.48	4.510E-03	.1979	4.020E-03	.2641	5.402E-03	.2370	3.713E-03
5	5H29(350)	41.42	40.51	4.5[illegible]5E-03	.1978	4.018E-03	.2640	5.400E-03	.2369	3.712E-03
1	419S(350)	42.47	41.56	4.4[illegible]2E-03	.1953	5.941E-03	.2607	5.331E-03	.2339	3.665E-03
5	5P3C(350)	42.50	41.59	4.450E-03	.1953	5.940E-03	.2606	5.330E-03	.2338	3.664E-03